Senior Secondary Course

LIBRARY AND INFORMATION SCIENCE (339)

339en

विद्याधनम् सर्वधनं प्रधानम्

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NIOS SENIOR SECONDARY - LIBRARY & INFO SCIENCE (339)

Complete Textbook (22 Lessons)

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LIBRARY AND INFORMATION CENTRES : CONCEPT AND ROLE IN SOCIETY

1.1 INTRODUCTION

In the modern information society, libraries and information centres have a new role to play. This is due to increasing use of web-based information sources and electronic services. Libraries are also being managed in a more democratic way due to flexible communication system and efficient work organisation. Their services are also user-centric.

In this lesson, we will discuss the role of libraries and information organisations in the society. We will also study the significance of libraries in education, culture and recreation.

1.2 OBJECTIVES

After studying this lesson, you will be able to:

- define a library and an information centre;
- describe the purpose and functions of a library and an information centre;
- explain the role of libraries and information centres in modern society;
- list areas of activities of libraries/information centres;
- explain the significance of libraries in education, culture and recreation; and
- explain the role of libraries as repositories of knowledge.

1.3 DEFINITION OF A LIBRARY

The word 'Library' is derived from the Latin word "libraria" meaning 'a book place'. It originates from the term 'liber' which means 'a book'. According to the *Oxford Companion to the English Language* – "Library is a collection of books, periodicals and/or other materials, primarily written and printed."

Harrod's Librarian's Glossary and Reference Book defines 'Library' as:

(1) A collection of books and other literary material kept for reading, study and consultation.

(2) A place, building, room or rooms set apart for the keeping and use of a collection of books, etc.

(3) A number of books issued by one publisher under a comprehensive title as the 'Loeb Classical Library', and usually having some general characteristic, such as, subject, binding, or typography.

(4) A collection of films, photographs and other non-book materials, plastic or metal tapes, disks and programs.

In view of the above definitions, a library is defined as:

a. A place in which literary and artistic materials, such as books, periodicals, newspapers, pamphlets, prints, records, tapes and artefacts are kept for reading, reference, or lending.

b. A collection of such materials, especially when systematically arranged.

c. A room in a private home for such a collection.

d. An institution or foundation maintaining such a collection.

The library, thus, is a social organization and a necessary unit of the society. It is organized for transmitting knowledge and experience of society to individuals. This is done through books and other material like the maps, charts, phono-records, microfilms, etc.

Dr. S. R. Ranganathan, father of library science in India, describes the library as a public institution or establishment charged with the care of collection of books and the duty of making them accessible to those who require to use them.

Therefore, it could be derived from the above definitions that a library is an organization of records of human thought. These records are in a physical form, i.e., human thoughts embodied in the form of useful manuscripts, books, periodicals, audio-visual records, microfilms, graphs, charts, etc. These are arranged, stored and preserved in a physical functional structure for effective utilization by the potential users in future.

INTEXT QUESTIONS 1.1

1. What are the three basic requirements for the existence of a library?
2. List at least five forms in which human thoughts are made available in a library.

1.4 PURPOSE AND FUNCTIONS OF A LIBRARY

The purpose and functions of a library are given below:

1.4.1 Purpose

The purpose of establishing a library is to serve the society through the records of human thoughts, ideas and expressions by making them available to all.

1.4.2 Functions

The functions of a library are given below :

- Collect and provide books as well as other non-book materials to help the people to become aware of the thinking of others and to think and act independently.
- Foster and promote the spread of knowledge, education and culture;
- Provide facility for formal and informal life-long self-education in the community;
- Preserve the literary and cultural heritage of humanity for posterity as vehicles of culture and material for research;
- Provide reliable information for all kinds of users irrespective of age, caste, creed, colour, religion, sex, etc.;
- Collect resources in order to promote an enlightened citizenship and to enrich personal life; and
- Facilitate advancement of culture in the community.

In view of the above, functions of a library can be broadly grouped into following four areas:—

(a) Education

Libraries provide means for self-development of the individuals and groups at various stages of education. This closes the gap between the individual and recorded knowledge. As an educational centre, the libraries support and promote

all types of education, i.e., formal, non-formal, adult and life-long. This is achieved by stocking of books and other reading material for the community.

(b) Information Dissemination

Libraries help to provide accurate and current information to individuals and groups, particularly on the topics of their interest. The scope of information services is extended to include information on socio-economic needs of the society. A library has to serve as an information centre or referral centre for specialized sources of information. The employment opportunities, public utility services, social awareness programmes undertaken by various departments are considered to be essential areas of information. Information about these areas is collected and stored by libraries for dissemination to the general public.

(c) Promotion of Culture

Libraries act as one of the principal centres of cultural life and promote participation, enjoyment and appreciation of various arts. Promotion of culture has two aspects- firstly, reading and thinking, that widens mental horizon and develops creative capabilities of the individuals. Secondly, the library has to contribute to the cultural enrichment of the society by organizing extension activities like lectures, seminars, symposia, book exhibitions and cultural gatherings.

(d) Recreation

Libraries play an active role in encouraging the positive use of leisure time by providing material for change and relaxation. Provision of scope for healthy or positive use of leisure time is an important function of a library. Books of fiction, magazines, newspapers, etc. facilitate recreational reading. Audio-visual materials such as films, television, radio, audio-video cassettes, etc. increase the utility of a public library. Various forms of performing arts may also be organized in the library to make them real community centres.

INTEXT QUESTION 1.2

1. Explain the three basic functions of a library.

1.5 ROLE OF LIBRARIES IN SOCIETY AND EDUCATION

Libraries play an important role in the socio-economic, cultural and educational development of a society. Let us now study the role of libraries in modern society and education.

1.5.1 Library as a Social Institution

Library service is considered as a social necessity for the steady development of a person as a social being. Library as a social institution serves several purposes.

i) It helps the life-long self-education of one and all;

ii) It furnishes up-to-date facts and information on all subjects to everyone;

iii) It disseminates to everyone, in an unbiased and balanced way, all shared recorded views and thoughts;

iv) It provides opportunities for positive use of leisure time to one and all;

v) It preserves the literary and cultural heritage of humanity for antiquarian research; and

vi) It works for continued social well-being of the society, as an agency in-charge of all socialized recorded thoughts.

(a) Library for raising Cultural Level

Libraries enhance the level of intelligence and status of the common man in the society to a great extent. They also increase the quantum of common sense of the average man in the community. The library tends to increase the reading habits and change the reading tastes of the people by raising their cultural level.

To make the people erudite, civilized and cultured, an effective educational system largely dependent on abundant reading material is required. If reading materials are to be at the disposal of the whole population, libraries are inevitable. Libraries cater to all possible needs of the community, facilitate users to undertake research in every walk of life, provide recreation and information to all classes of the population.

(b) Library – an Instrument for Creating Refined Citizens

A civilized society is expected to have a literate and educated community fully aware of the value, importance and use of libraries. This is so because, wherever there is civilization, there must be books and wherever there are books, there are libraries. The library is, thus, a driving force capable of building a better society by its nature, variety, quality and extent of service. It is a support for all types of educational development of an individual. It enables every reader to access a wide range of reading material in order to broaden one's outlook, knowledge and ideas. The success of any democracy depends upon the educated and enlightened citizens irrespective of their social status. An informed and refined citizen tries to judge what is right and wrong. It opens the windows of

the mind and enables the readers to solve their crucial problems in a reasonable manner.

(c) Library Promotes the Desire for Books

Being a social institution, library not only satisfies the readers by providing books but also promotes the desire for books. By promoting the reading habits of the people, the library makes them library-minded and enables them to love books. Demand for required books is fully met by librarians who make them available to the users. Therefore, the libraries play a vital role in the social life of the community. The growth in the size and stock of books, is made possible by the increased desire for books by innumerable readers, giving due importance to libraries in the cultural and social development of the society.

(d) Library Facilitates Social Integration

As a social institution and library allows its users to interact among themselves. This is carried out by organizing talks, lectures, films, discussions on current topics, book exhibitions, and some socially useful activities. A library provides a right forum for social get-together within its premises and makes it available on equal terms to all groups in the community.

(e) Library Preserves Knowledge

A library maintains archives of old and rare documents thereby preserving literary heritage for posterity. It stores the literary remains of humanity for antiquarian research in varied physical formats. Such collections help researchers to delve into historical aspects.

1.5.2 The Role of Library in Education

Education and training of the individual is considered an essential means of stimulating economic and social development. To make the people erudite and civilized, the society requires an effective educational system. Without libraries there can neither be any good school, college or university nor can life-long education of adults be encouraged. It is believed that where formal education ends, informal education begins and a life-long learning process is sustained with the support of adequate and proper library service.

(a) The Library as a People's University

Education aims at imparting knowledge and skills to individual human beings for his/her self development and inculcation of civic and social responsibilities, so that he/she can play a positive role in the development of a society and a

nation. Libraries are the foundation in such an endeavour and can essentially be considered "Universities of the people".

(b) The Library as a Centre of Mass Education

Libraries in general and public libraries in particular, have a very important role to play in the fields of political awareness, socio-economic growth, cultural and educational enlightenment which are indispensable to the future development of any country. Library service to all classes of people acts as an intellectual catalyst by providing facilities for acquiring education, information, recreation, aesthetic appreciation and research, irrespective of age and sex for the welfare of the society as a whole.

(c) The Library as a Centre of Continuing Education

People continue their reading habits with the help of libraries according to their desire, capacity or need. Being a centre of continuing education for millions of people, it develops their vocational, professional and learning skills thus facilitating individual and community problems solving. A Library informally provides life-long continuing education to individuals.

INTEXT QUESTIONS 1.3

1. What is the importance of a library in a society?

2. How are social and educational development of people possible through libraries?

1.6 INFORMATION CENTRES

The progress of civilization and advancement in science and technology resulted in tremendous growth of literature. The explosion of knowledge in multi-disciplinary subjects was recorded not only in books but also in latest research periodicals, research and technical reports, patents, standards and specifications, trade transactions, circulars, reprints, off-prints, etc. The specialists not only needed books but also information contained in periodical articles and other material. Information centres were set up to cater to their specialised information needs.

An Information centre is defined as an organisation that (1) selects, acquires, stores and retrieves information in response to requests, (2) prepares abstracts, extracts, indexes of information, and (3) disseminates information in anticipation and in response to requests. Information centres are attached to highly

specialised Research and Development (R&D) organisations. An Information Centre provides various services such as referral service, literature search, translations, bibliographies, abstracting, etc. to its users.

There are varied forms of information centres viz. (1) Information Analysis Centres (2) Clearing Houses (3) Data Centres and Data Banks.

(1) Information Analysis Centres: They collect literature produced in a particular field, evaluate its utility and communicate to the specialists conducting research in directly usable form on request. The centre verifies the collected information for its validity, reliability and accuracy before dissemination. The reports of these analysis centres play an important role in strengthening research, pinpointing gaps in knowledge or shortcomings.

(2) Clearing Houses: They are set up either on a cooperative basis or by a national or international agency. They provide a single point of access to information originating from different sources, countries and languages. They compile bibliographies of particular disciplines and circulate them to the organisations interested in them. A copy of the available document, if requested, is also provided.

(3) Data Centres and Data Banks: Data centres collect, organise and store numerical data pertaining to specific subject field to answer specific queries. They collect information in anticipation of future requirements of its users. Data Banks are usually concerned with a broader subject field. They extract and process raw data from the collected data sources and relevant literature. They keep these structured files ready to provide right answers to user's queries.

These centres are managed by subject experts as well as library and information professionals who organise information to retrieve and disseminate for conducting research. Staff of these centres varies, but may include all or any of the following: Research officers, librarians, bibliographers or trained information officers. It may include the functions of a special library and extend its activities to include collateral functions such as technical writing, abstracting, Selective Dissemination of Information (SDI) and library research for clients.

1.6.1 Difference between a Library and an Information Centre

A library differs from an information centre in many ways. Libraries provide macro-documents to their users whereas information centres provide micro-documents. Library also differs from information centres in the types of documents stored, types and levels of users, provision of documents rather than information, rendering services to both, internal and external users. Apart from collecting, processing and disseminating information, documentation/information centres are also involved in analysis and presentation of information.

A major difference, thus, is that, a library provides only the document as a whole but an information centres provides not only the document but also the details of the contents of the document. For example in a library a book which contains particular information is provided, where as in an information centre exact information is provided not the entire book.

INTEXT QUESTIONS 1.4

1. Define an information centre.
2. How are libraries different from information centres?

1.7 LIBRARIES AND INFORMATION CENTRES OF INFORMATION AGE

A society does not remain static but goes on changing. As a library is a social institution, social changes also affects the role of libraries. The present day society has undergone transformation in almost all sectors. Several factors are responsible for this transformation. These are as follows.

- Political and social stability of the society
- Expansion of educational facilities and high rate of literacy
- National, regional and local socio-cultural traditions
- Urbanisation and globalisation of population due to migration
- Growth in trade and commerce, industry and business
- Encouragement from national, local and state governments
- High standard of living
- Influence of leaders and individuals in different fields
- Well established book trade
- Mass communication
- Computer and communication technology

These social, political and economic conditions have left a great impact on all aspects of the growth of libraries, by radically changing their conventional functions. It not only deals with books but collects information in multiple media for its clients. The modern library has undergone changes in handling the basic functions of a library viz. collection, processing, storage, retrieval, dissemination and utility of information. New information, communication and

networking technologies have completely changed the functioning of the libraries. Information is collected, processed, stored and disseminated using sophisticated technologies. Users are provided information at their own desks or even in their homes through Local Area Networks (LAN) and Wide Area Networks (WAN). There is no need to visit a library to access information and thus save time.

A library is regarded as a service institution. The advent of computer, communication, information and networking technologies have posed a great challenge to the librarians. In order to render efficient services and assist the users to make effective use of the available resources, a librarian has to understand, appreciate and accept these changes. They must be willing to cope with the changes and adopt them for taking advantage of the same.

INTEXT QUESTION 1.5

1. How have information technologies affected modern libraries?

WHAT YOU HAVE LEARNT

- A library is responsible for collecting, organising and storing all kinds of print and non-print materials for providing efficient services to users. It plays a vital role in promoting socio-economic, cultural and educational development of a society.

- Libraries occupy a prominent place in the society in developing social and educational standard of the common citizen. They provide support in promoting research, cultural, recreational, spiritual and ideological activities of a human being thereby contributing a lot to the nation building programmes.

- Libraries, as repository of knowledge, are used by all types of users to build up a value system for themselves. Libraries provide the means to accomplish the advancement of learning as well as the building up of the nation's soul.

- The use of library by the people make them well-informed citizens of the society and allow them to become knowledgeable and educated in course of time.

- An Information centre is defined as an organisation that (1) selects, acquires, stores and retrieves information in response to requests, (2) prepares abstracts, extracts, indexes of information, and (3) disseminates

information in anticipation and in response to requests. Information centres are attached to highly specialised research and development (R&D) organisations.

- New information, communication and networking technologies have completely changed the functioning of libraries. Information is collected, processed, stored and disseminated using sophisticated technologies.
- Users are provided information at their own desks or even in their homes through Local Area Networks (LAN) and Wide Area Networks (WAN). There is no need to visit the library to access information and thus save their time.

TERMINAL QUESTIONS

1. Discuss the role of libraries in the context of a changing society.
2. "Libraries contribute greatly to the society in promoting education — both formal and non-formal in many ways." Discuss.
3. "Knowledge is power". Explain this statement by highlighting the importance of libraries in enriching the knowledge of the individuals.

ANSWERS TO INTEXT QUESTIONS

1.1

1. The basic requirements of a library are a functional building, records of human thought in the form of manuscripts, books, periodicals, audio-visuals, microfilms, charts, etc. and potential users to use them.
2. Human thoughts are made available in the form of books, periodicals, manuscripts, audio-visual records, micro-films, graphs, charts, maps, CD-ROMs, DVDs, etc.

1.2

1. The three basic functions of a library include promotion of education, information dissemination, promotion of cultural and recreational activities.

1.3

1. A library serves as a social agency, an agency of perpetual self-education, a community's intellectual centre and a people's university.

2. The use of library by the people makes them a well-informed citizen of the society and allow them to be knowledgeable and educated in course of time.

1.4

1. Information centre is defined as an organisation that (1) selects, acquires, stores and retrieves information in response to requests, (2) prepares abstracts, extracts, indexes of information, and (3) disseminates information in anticipation and in response to requests. Information centres are attached to highly specialised research and development (R&D) organisations.

2. A library differs from an information centre in many ways. Libraries provide macro-documents to their users whereas documentation/information centres provide micro-documents. Library differs from documentation/ information centres in the types of documents, types and levels of users, provision of document rather than the information, rendering services to both internal and external users. A major difference thus is that, a library provides only the details about document but a documentation/information centres provides exact information.

1.5

1. The basic functions of the library viz. collection, processing, storage, retrieval, dissemination and utility of information have undergone changes by adopting computer and communication technologies.

GLOSSARY

Antiquarian : Study of rare collection.

Aesthetic : The study of the mind and emotion in relation to the sense of beauty.

Catalyst : A substance that helps to bring about a change

Erudite : Learning and scholarly activities.

Macro document : A document providing a broader view of a subject.

Micro document : A document covering a narrow field of knowledge.

Phono-record : An object on which sound has been recorded.

Repository : A place where library materials are stored and are readily available on request.

SUGGESTED ACTIVITIES

1. Visit any large library and get acquainted with its environment, collection and various services and write a report.

2. Interact with the professionals working in the library to understand it's working. Observe the various users visiting the library and try to find out the kind of documents used by them.

WEBSITES

1. http://www.ifla.org/files/assets/literacy-and-reading/publications/role-of-libraries-in-creation-of-literate-environments.pdf

2. http://www.egyankosh.ac.in/handle/123456789/7236

3. http://www.cobdc.org/jornades/7JCD/ryynanen.pdf

4. http://dspace.knust.edu.gh:8080/jspui/handle/123456789/3716

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2

TYPES OF LIBRARIES AND INFORMATION CENTRES

2.1 INTRODUCTION

In the previous lesson, you have learnt about the need, importance and functions of a library in the society. You have read that libraries play an important role in socio-economic, cultural and educational development of a society. The libraries strengthen literacy among the people. Library services improve knowledge and skills of people for positive productivity thereby contributing to national development. There are many types of libraries throughout the world. In this lesson, you will learn about different types of libraries and their functions in the present day society. We will discuss each type of library along with examples.

2.2 OBJECTIVES

After studying this lesson, you will be able to:

- identify the type of a library, viz., Public, Academic, Special and National;
- explain the parameters (users, collections and services) for categorizing the libraries;
- illustrate the objectives, functions and services of each type of library;
- list various levels of academic and public libraries; and
- give examples of each type of library.

2.3 TYPE OF LIBRARIES

Libraries can be categorised into the following four types, i.e. Academic, Public, Special and National libraries. The public libraries function with special

reference to present day information society and serve general public. Academic libraries are those that are part of the educational institutions, ranging from primary schools to universities. The special libraries are a natural outcome of need for information support to research and development, business, industry, etc. A national library acquires all documents of and about a nation under some legal provision and represents publications of and about the whole nation. Different types of libraries emerged due to increase in number of users, enormous increase in information resources in all disciplines and demand for different types of services by the users.

In the subsequent sections, you will read more about the need, objectives, functions and services of each type of library.

INTEXT QUESTIONS 2.1

1. Give the reasons for categorizing the libraries.

2. What are the different types of libraries identified to meet the requirements of users?

2.4 PUBLIC LIBRARY

A public library is a social institution. It plays a significant role in the welfare of a society. There are a number of factors responsible for the evolution of public libraries. These are:

- Peoples' urge for knowledge
- Improvement of literacy level through self-education
- As an Information dissemination centre
- Need for life- long learning centre
- To be Community's intellectual centre
- As a Recreation centre
- Advancements in science and technology

With the developments in computer and communication technologies, it is possible for the public libraries to provide quick information through mass media and internet.

2.4.1 Definition of a Public Library

A public library is a non-profit library established for the use of the general public and maintained chiefly by public funds. In other words, a public library is for the public, by the public and of the public. It provides service to every

citizen irrespective of one's birth, caste, colour, sex, social, economic and educational standard without any cost. Libraries of all categories are generally used for five purposes, i.e., education, information, recreation, aesthetic appreciation and research. For example, Academic libraries are primarily used for education and research. Special libraries are meant for information and research, but Public libraries are visited for all the five purposes.

UNESCO's Public Library Manifesto

UNESCO formulated a Public Library Manifesto for member countries in 1949 and revised it in 1972. Later, in 1994, it prepared the Public Library Manifesto in cooperation with the *International Federation of Library Associations and Institutions (IFLA)*. This manifesto is widely accepted by all countries. It provides guidelines regarding objectives, activities and services of public library; its funding, legislation and networks; its operations and management and implementation of the Manifesto. It has specified the missions of the public library. These are given below.

Missions of the Public Library

The following key missions that relate to information, literacy, education and culture should be at the core of public library services:

1. creating and strengthening reading habits in children from an early age;
2. supporting both individual and self conducted education as well as formal education at all levels;
3. providing opportunities for personal creative development;
4. stimulating the imagination and creativity of children and young people;
5. promoting awareness of cultural heritage, appreciation of the arts, scientific achievements and innovations;
6. providing access to cultural expressions of all performing arts;
7. fostering inter-cultural dialogue and favouring cultural diversity;
8. supporting the oral tradition;
9. ensuring access for citizens to all sorts of community information;
10. providing adequate information services to local enterprises, associations and interest groups;
11. facilitating the development of information and computer literacy skills; and
12. supporting and participating in literacy activities and programmes for all age groups, and initiating such activities, if necessary.

(Source: http://archive.ifla.org/VII/s8/unesco/eng.htm)

In short, the UNESCO Public Library Manifesto suggests that a public library is expected to play its role mainly in three principal areas viz. information, education and culture. It has to serve as a:

- centre for information;
- centre for self-education;
- centre for culture; and
- centre for local cultural materials.

2.4.2 The Objectives and Functions of Public Libraries

According to S. R. Ranganathan, the objectives and functions of a public library are as given below.

i) Help the life-long self-education of one and all;

ii) Furnish up-to-date facts and information on all subjects to one and all;

iii) Distribute in an unbiased and balanced way all recorded information to the citizens to help them discharge their duties towards local, national and international affairs;

iv) Convey new knowledge to the researchers as early as possible;

v) Preserve the cultural heritage of the country;

vi) Provide facility for fruitful utilization of leisure time; and

vii) Work for the continued social well being of citizens as the in-charge of all material.

The functions of the public libraries are, summarized below:

Most of the countries have legislation for public library system and they are set up considering the organizational structure and geographical distribution to reach all the people, i.e., in all states, districts and villages. In order to attract users to the library and to sustain their interest in reading, the library organizes cultural activities such as lectures, discussions, film shows, musical concerts, plays and art exhibitions and story hours for children. It not only serves as a repository of books, but as a cultural centre also. A public library, therefore, plays a very important role in building well-informed, skilled and productive citizens.

Examples of Public Libraries

1. Delhi Public Library, Delhi.
2. Khuda Bakhsh Oriental Public Library, Patna.
3. Connemara Public Library, Chennai

Notes

INTEXT QUESTIONS 2.2

1. Briefly enumerate the functions of a public library as mentioned in the UNESCO Public Library Manifesto.

2. Do you have a public library in your area/ state? If yes, mention the name.

2.5 ACADEMIC LIBRARY

The role of the library in any academic institution can be realized only in the context of the institution's philosophy of education. This is true of most of the libraries of the world's academic institutions. Education is a process of learning with an aim to develop the capabilities among the people. Academic libraries which comprise school, college and university libraries have normally four types of users based on the level of education they cater to. These are:

a) Students

b) Teachers

c) Research scholars

d) Administrative, professional and other staff of the institution

Their objectives, functions, sources of finance, qualifications, designations, and strength of staff differ according to the type of a library. Building up a collection of books, periodicals, reference books and other multiple media material constitutes an integral part of learning, teaching and research. The services such as provision of reading facilities, lending and reference services, etc., also vary in these libraries.

The objectives of an Academic Library are to:

- serve the needs of the academic community;
- collect and store all kinds of reading and reference material;
- provide reading areas for users;
- render lending service appropriate to students, teachers and researchers;
- provide an active reference and information service.

Academic libraries are grouped into three categories. These are:

1. School libraries

2. College libraries

3. University libraries

2.5.1 School Libraries

In India, schools are further divided into four groups according to the levels of education they cater to. Schools can therefore be primary, middle, secondary, and senior secondary.

Objectives of School Libraries

All types of schools have a library with the objectives to:

- awaken and foster interest in reading books;
- create love for books;
- promote reading habits; and
- inculcate communication skills through extra curricular activities like story telling, viewing and discussions on audio/visual programmes workshops etc.

Functions of School Libraries

In order to attract students to the library and develop their interest and curiosity, a school library should:

- acquire a good stock of teaching - learning material for students and teachers;
- display books in classified order;
- provide functional physical facilities such as building, furniture and equipment; and
- hire qualified committed staff.

Schools at primary, secondary and senior secondary levels require similar consideration as mentioned above. The school library services include:

- Lending
- Reading
- Reference service, and
- Guidance and advisory services with the objective of inculcating interest of children for reading books and other reading material.

Examples of School Library

1. Delhi Public School Library, New Delhi
2. Kulachi Hansraj Model School Library, Delhi

INTEXT QUESTIONS 2.3

1. What are the primary objectives of a school library?

2. Why is display of new books important for school children?

2.5.2 College Library

The support of a library at the college level is essential to broaden the minds of the young students to meet new challenges. Compared to school education, college education is totally different for students. There are a large number of students in each class, and therefore, it is not possible for the teachers to give individual attention to each student. However, the students have to, depend on college library for their studies and develop a habit of self-learning. College libraries are further classified in four categories, viz.,

(1) Junior colleges

(2) Degree colleges

(3) Postgraduate colleges, and

(4) Professional colleges.

Objectives of a College Library

The chief objectives of a college library are to:

- give the enrolled students a wider and deeper understanding of the various disciplines;
- provide guidance to students for higher studies and self-learning;
- prepare the students for shouldering higher responsibilities inschools, government departments, civic organizations, commercial establishments, business and industrial companies, etc. ;
- train them to become more enlightened, knowledgeable and responsible citizens; and
- prepare them for varied professions like law, medicine, engineering, technology, etc.

Functions of a College Library

The basic functions of a college library are to:

- assist its parent body to carry out the requirements of its teachers and students regarding reading, study and research;
- provide physical facilities such as functional building, furniture, equipment, etc. ;

- provide latest editions and multiple copies of curriculum based textbooks and recommended books for their study;
- equip the library with a wide range of reference books;
- develop collection of latest books in different subjects and periodicals including their back volumes;
- procure multiple media material and computer-aided teaching – learning material;
- subscribe to important newspapers and other light material such as popular fiction, biographies, travelogues, art books, etc. for recreation purpose; and
- preserve previous years' question papers to help the students.

College Library Services

College library staff provides the following services:

- Provide reading, lending and textbook services;
- Guide students in the use of manual or computer catalogue;
- Assist in locating books and reference books from the shelves;
- Train and instruct students to use library resources in an effective and efficient manner
- Provide information, reference and referral services to all library members;
- Display new books and lists of multiple media material;
- Procure adequate multiple media material and equipment to render them usable; and
- Reprographic service.

Library Committee

In every college, there is a library committee. The Principal happens to be the Chairman of the Library Committee in which the Librarian is the Member-Secretary. A few senior faculty members and outside library experts are the other members of the library committee. The librarian has the executive responsibility for the day to day management whereas overall policy decisions for the development of the library are taken by the Committee members. The major sources of finance of a college library are grants from the UGC, State Government, fees and fines from the students.

Examples of College Libraries

1. Kirori Mal College Library, Delhi
2. Lakshmibai College Library, Delhi
3. Government College of Technology Library, Coimbatore.

INTEXT QUESTIONS 2.4

1. What is the composition of the Library Committee of a College?
2. Mention at least three services of a college library that are different from that of a school library.

2.5.3 University Library

In India, a number of universities have grown very fast since 1947. The growth is evident from the growing number of students' enrollment, research scholars, courses in varied disciplines and multi-disciplines, creation of a number of new departments, research projects and a large number of faculty members. There are different types of universities such as conventional, professional, deemed, and open universities.

A university library is established, administered and maintained to assist the university in five major functions such as - teaching and learning; research and generation of new knowledge; dissemination and publication of research results; conservation of knowledge and ideas; and extension programmes. The university libraries have to play a very challenging and difficult role to satisfy the demands of larger group of students, research and post-doctoral research scholars, members of the various academic and executive bodies of the management, administrative and professional staff of the university.

Objectives of a University Library

A University library plays a very important role by supporting and helping the university in achieving its aims and objectives. It has to cope with the multidimensional activities of the university. The objectives of a university library are to:

- provide intellectual and managerial leadership among the professionals in various fields of government, industry, health, engineering, law, medicine, defence, education, agriculture and inculcate in them a sense of social purpose;
- guide research workers in all areas mentioned above so that the results of research could be harnessed to improve the quality of life of the people; and
- conserve knowledge and ideas for posterity.

Functions of a University Library

The major functions of the university library are to:

- develop collections of print and media resources in a wide variety of subjects for learning, teaching, research, publication, etc.;

- organize and store the acquired collection/knowledge for use by the readers;
- provide a variety of library, documentation and information services, both responsive and anticipatory; and
- encourage students, researchers and teachers in using the library for pleasure, self-discovery, personal growth and sharpening of intellectual skill.

Services of a University Library

The nature and efficiency of services provided vary from library to library. With the introduction of information and communication technologies, most of the university libraries have automated their library operations using Library Management Software and are providing a variety of services which were not provided before. University library provides services as mentioned below.

- Reading and lending service;
- Bibliographic instruction and library orientation;
- Assistance in the use of the library catalogue and locating documents;
- Reference and information services;
- Current Awareness Services (CAS);
- Selective Dissemination of Information (SDI);
- Bibliographic services;
- Inter-Library Loan (ILL) service;
- Reprographic services;
- Maintenance of News Paper Clippings;
- Maintenance of vertical files containing pamphlets, prospectuses, reports, and question papers of previous years' examinations;
- Reservation of documents;
- User education;
- Exhibition and special displays;
- Special lectures, demonstration of new software and services; and
- User oriented seminars, workshops.

University Library Committee

The university library is headed by a Chief Librarian. It is governed by the statutory laws of the university. The library system is subjected to scrutiny and evaluation by its academic and executive councils. A Library Advisory Committee

is constituted and chaired by the Vice-Chancellor or his nominee with the librarian as its member secretary and convener. The committee comprises some senior members of the university faculty, library and information science experts and a few scholars.

The library committee is responsible to lay down guiding principles and policies on all matters concerning academic and administrative affairs of the library system. The Library Committee approves the budget prepared by the librarian before it is sent to the Finance Committee. The main source of finance is University Grants Commission (UGC), Central/State Government Grants, Fees and Fines from the readers etc. It advises on the extraordinary purchase of bulk collection, back volumes of periodicals, e-journals, furniture, equipment, computers and communication hardware and software, and also acceptance of major gift collection.

Examples of University Libraries

1. Delhi University Library
2. Jawaharlal Nehru University Library
3. Madras University Library

INTEXT QUESTIONS 2.5

1. Enumerate the types of universities.
2. Who are the users of university library?

2.6 SPECIAL LIBRARY

Special libraries came into existence in the 20th century. A Special library deals with special user groups, has special subject collections and renders special services. These libraries are established to meet the information requirements of the organisations to which they are attached. They are generally devoted to Research and Development (R&D) activities and procure all types of documents in the form of handbooks, technical reports, state-of-the-art reports, bibliographies, current awareness bulletin, periodicals, indexes, abstracts, directories, documentation lists and accession lists.

Definition of a Special Library

Harrod's Librarians' Glossary of Terms defines that a, "Special library is a collection of books and other printed, graphic or recorded material dealing with a limited field of knowledge and provided by a learned society, research organization, industrial or commercial undertaking, government department or

even an educational institution. It may also be a special branch of a public library serving certain interests or occupational groups such as a technical library or a special subject library, meeting the needs of all enquiries on that given subject such as music library.

Objectives of a Special Library

A special library is an integral part of a parent institution and fully supports its programmes and activities. The main objectives of a special library are to develop current as well as retrospective collection in core subjects based on the projects and programmes of the parent organization. Their aim is to provide promptly the latest information about the significant developments in the field whenever requested by the users. It provides all types of academic, technical and documentary support to render appropriate services to the specialists.

Functions and Services of a Special Library

A special library performs various functions and provides services as mentioned below.

- Performs exhaustive literature search to compile comprehensive lists;
- Selects, procures, organizes, stores and retrieves current information required by the users;
- Analyses, synthesizes and evaluates available information;
- Provides state-of-the-art-reports, critical reviews, monographs, research reports, reprints,
- Provides indexes, abstracts and extracts;
- Prepares accession lists, bulletins, newsletters, summaries, handbooks or manuals; bibliographies;
- Issues documents including inter-library loan;
- Renders reference and referral services; and
- Provides Current Awareness Services (CAS), Selective Dissemination of Information (SDI), and Translation Services.

Type of Special Libraries

There are varied type of special libraries. They are –

- *Government Libraries* -
  Parliament Library, New Delhi
  Central Secretariat Library, New Delhi
- *Libraries of Societies and Institutions* –
  U.P. Historical Society, Lucknow
  World Poetry Society Intercontinental, Chennai

- *Industrial and Commercial Organisations –*
  Library of Larsen and Toubro, Mumbai
  Bharat Heavy Electricals Limited Library, New Delhi
- *Research Organisations –*
  Indian Council of Medical Research, New Delhi
  Indian Council of Agricultural Research, New Delhi
- *Academic Institutions –*
  Indian Institute of Technology at New Delhi, Bombay, Chennai, Kanpur, etc.
  School of Planning and Architecture, New Delhi
  Lal Bahadur Shastri Institute of Management, New Delhi
- *Public Libraries –*
  New York Public Library, New York - Science Division
  Delhi Public Library, New Delhi

Examples of Special Libraries

1. IIPM Library, New Delhi
2. National Institute of Immunology, New Delhi

INTEXT QUESTIONS 2.6

1. List the services usually rendered by a special library.
2. Name a few world renowned special libraries in the field of science, technology and medicine.

2.7 NATIONAL LIBRARY

In most countries there is a national library maintained by national resources, usually entrusted with the responsibility of publishing a national bibliography. National libraries collect and preserve the nation's literature. Most national libraries receive, by legal right (or copyright, or deposit), one free copy of each book and periodical printed in the country.

A National Library is a library specifically established and funded by the government of a country to serve as the pre-eminent repository of information for that country. In National Library, a limited number of books are lent out to readers under certain terms and conditions. It rarely allows citizens to borrow rare, valuable or significant works.

Definition of a National Library

Harrod's Librarians' Glossary (1987) defines a National Library as a library maintained out of government funds and serves the nation as a whole. The books are mainly for reference. They usually receive material through legal deposit legislation. The function of such a library is to collect and preserve for posterity all the published records viz. books, periodicals, newspapers and other printed and multimedia material of the country's cultural heritage. This is best done by a law requiring publishers to deposit copies of all publications produced by them and by purchasing books on their country published in other countries. A legal deposit normally has penalty clauses to enable the act to be enforced.

Objectives and Functions of a National Library

The main objective of a National Library is to identify, acquire, organize, store and retrieve all print and non-print documents published within or on a particular country and by or on all the nationals of that country in other countries.

The functions of the national library recommended in the *Final Report of the Regional Seminar on the Development of National Library in Asia and Pacific Area* held in Manila in 1964 are to :

- provide leadership among the nation's libraries;
- serve as a permanent depository for all publications issued in the country;
- acquire other types of material;
- provide bibliographical services;
- serve as a coordinating centre for co-operative activities; and
- provide service to the government.

Examples of National Libraries

There are comprehensive National Libraries of the countries performing all activities and functions. They are:

1. The National Library of India, India
   http://www.nationallibrary.gov.in/
2. The Library of Congress (LC), USA
   http://www.loc.gov/index.html
3. The British Library, UK
   http://www.bl.uk/

4. The National Library of Canada, Canada
http://www.ottawakiosk.com/national_library.html

In the last few decades, the activities of National Libraries have expanded considerably. Consequently, several of these activities and functions are shared by a few National Libraries that have emerged in different countries and are grouped by their (a) functions; (b) subjects, (c) special groups served, (d) type of material collected, (e) sub-national serving a geographical area, or a cultural group, and (f) sharing functions. They are as under –

S. No.	Type	Area/Function	Example
1.	By functions	Lending	British Library Document Supply Service, UK
2.	By subject	Medicine Agriculture	a) National Medical Library, India b) National Agricultural Library, USA
3.	By special group served	Blind	a) National Library of the Blind, UK
4.	Sub-national serving a geographical area or cultural group	Area/State Cultural Group	a) National Library of Wales, U.K. b) National Library of Serbia, Serbia.
5.	By sharing	Sharing functions	State & University of Aarhus, Denmark

INTEXT QUESTIONS 2.7

1. How is a Special Library different from a National Library?
2. Search the internet to find out if there is any library which cater to the needs of deaf and mute (a) in our country (b) in other countries.

WHAT YOU HAVE LEARNT

- In this lesson, we have introduced you to different types of libraries that fulfill the information needs of various people.

- We have discussed the definition, objectives, functions, user-groups and services rendered by each type of library, i.e., Academic, Special, Public, and National libraries. As a whole, these libraries serve the purpose of varied users from a general approach to a particular approach.
- Acquaintance with these types of libraries, their nature of collections, functions and services shall encourage you to know more and more about these libraries at higher level.
- Public libraries are social institutions that offer information dissemination services to various public groups. The collection is based on social, political, economic and cultural subjects.
- Academic libraries serve the students, teachers and research scholars.
- Special libraries serve specialists/researchers in special fields.
- National libraries cater to entire nation having all types of collections in all languages.
- There is no sharp distinction between different types of libraries. Management, engineering and medical college libraries are academic as well as special libraries. Public libraries can make positive attempts to develop collection for special groups of adult learners.

TERMINAL QUESTIONS

1. Write down the important functions of a public library.
2. Describe the functions of a college library.
3. State the functions of any special library you have visited.

ANSWERS TO INTEXT QUESTIONS

2.1

1. Categorization of libraries emerged due to increasing number of users, enormous number of information resources in all disciplines, and demands for varied kinds of information.
2. The four types of libraries identified to meet the requirements of the users are academic libraries, special libraries, public libraries, and national libraries.

2.2

1. The functions of a Public Library as given in the UNESCO Manifesto for Public Libraries are summarized below. It has to serve as:
   - centre for Information;
   - centre for Self-Education;
   - centre for Culture; and
   - centre for Local Cultural Materials.
2. Open ended. Answers will vary.

2.3

1. The objectives of school library are to awaken and foster interest in reading books; create love for books; promote reading habits; and inculcate communication skills.
2. To motivate children to browse through new books and to raise their awareness about new kinds of books in different areas.

2.4

1. In a college, the Principal is the Chairman and the Librarian is the Member-Secretary of the Library Committee. A few members of the faculty and an outside library expert constitute the Library Committee of a college library.
2. Three services of college libraries, that are different from a school library are follows:-
   - reprographic services;
   - train students to make efficient use of available library resources; and
   - help students to consult manual or computer catalogues.

2.5

1. There are four types of universities. These are conventional universities, professional universities, deemed universities, and open universities.
2. A large number of students, M.Phil and Ph.D students, post-doctoral research scholars, members of the various academic and executive bodies, and the management, administrative and professional staff of the university are the users of the university library.

2.6

1. A special library usually renders the following services.

   - Performs exhaustive literature search to compile comprehensive lists;
   - Selects, procures, organizes, stores and retrieves current information required by the users;
   - Analyses, synthesizes and evaluates available information;
   - Provides state-of-the-art-reports, critical reviews, monographs, research reports, reprints,
   - Provides indexes, abstracts and extracts;
   - Prepares accession lists, bulletins, newsletters, summaries, handbooks or manuals, bibliographies, etc.;
   - Issue of documents including inter-library loan;
   - Renders reference and referral services; and
   - Provides services like Current Awareness Services (CAS), Selective Dissemination of Information (SDI), and Translation Services.

2. Open ended. Answers will vary.

2.7

1. A special library acquires special collection and renders specialized information and documentation services to specialized users, whereas a national library acquires all types of collection in all languages and provides general to specialized services to all needy users.

2. Open ended. Answers will vary.

GLOSSARY

Anticipatory Information Service: The service provided by the libraries in anticipation of the demands from the users.

Bibliography: The arrangement of books and audio-visual material in a logical order giving author, title, date, place and publisher, edition, page, etc.

Biographical works: They are usually non-fiction personal life description, but fiction can also be used to portray a person's life.

Biography: A biography is a detailed description or account of someone's life.

Inter-Library Loan: It is a service whereby a user of one library can borrow

books or receive photocopies of documents that are owned by another library.

Mass Media: Medium of communicating with the masses like T.V., Radio, Film, Newspapers, etc.

Non-Print Material/Non-book Material/Media Material: Library materials which do not fall within the definition of a book, periodical or pamphlet and require special handling. Such material comprises audio-visual, photographic, electronic and digital, material.

Repository: A place where materials are deposited under special conditions - commonly refers to a location for storage, often for safety or preservation.

Reprographic Service: A photocopying service of pages from books or journals available to users in a library.

Responsive Information Service: Library services provided on demand when a person either visits the library or requests on phone or through email.

State-of-the-Art-Report: A report on the development of a specific subject field or problem by a systematic, exhaustive and critical review of published and non-published material.

Technical Report: Is a document that describes the process, progress or results of technical or scientific research or state of a technical or scientific research problem.

SUGGESTED ACTIVITIES

1. Visit at least one public, school, college, university and special library located in your locality in order to get first hand information and an idea about these libraries.
2. After visiting the library, submit a write-up of at least 500 words about any one kind of library mentioned above.
3. Visit the website of the National Library of India, Kolkata. Write down the chief activities of the National Library.

WEBSITES

1. http://www.ala.org/educationcareers/careers/librarycareerssite/typesoflibraries
2. http://lis510-libraries.wikispaces.com/Different+types+of+libraries
3. http://theindexer.hubpages.com/hub/The-three-main-types-of-library
4. http://www.netugc.com/librarians-in-different-types-of-libraries

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MODERN LIBRARY: AUTOMATED, DIGITAL AND VIRTUAL

3.1 INTRODUCTION

You are already familiar with different types of libraries and their functions and services. Application of computers, in particular, to library operations has got various implications. At present, users need pinpointed, speedy and in-depth information on a specific field and that too as quickly as possible. Multifold increase in the information output and its usage has made it a challenge for the librarians to organize and disseminate required information quickly. Organizing this enormous information, manually and by conventional methods is time consuming. Therefore, there is urgent need to computerize libraries to provide efficient and timely services to the users. Moreover, in this busy world every minute of the user is valuable. It has thus, become a necessity for any service oriented organization to save the time of the user and fulfill the fourth Law of Library Science, i.e., Save the time of the user. The speed of processing, the conservation of space by avoiding catalogue cabinets, the accuracy and incorruptibility of the data and reliability of the systems are some of the important considerations in advocating computerized management of libraries.

In this lesson, you will be introduced to various aspects involved in automation of libraries, concepts of digital and virtual libraries. Before going further, we shall understand in this lesson impact of computers in modern society.

3.2 OBJECTIVES

After studying this lesson, you will be able to:

- describe the impact of computers in modern society;
- explain the need for library automation;

- discuss different areas of application of library automation;
- explain the salient features of an automated library; and
- explain the difference between digital and virtual libraries.

3.3 IMPACT OF COMPUTERS IN MODERN SOCIETY

Development of Computers is one of the greatest scientific achievements of the 20th century. This is the age of computers and a vast majority of people are using them. Today computers have become an integral part of our everyday life. Computer technology has made communication possible from one part of the world to the other in seconds. Computer technology has brought about many changes in the way we live in this present society. This has affected not only the individuals per se but also all organizations and society.

In our individual lives, we have seen computers, having a major impact on the way we are able to communicate with each other. In the earlier years, when computer technology was still in its infancy, reliance was on other forms of communication methods, such as telegraph, post and later on telephone. These were the only forms used for keeping in touch. Although, these forms in their own way were effective, but at times these (e.g. post and telegraph) proved to be unreliable with delays in receiving information. With the introduction of network computers connected to phones as well as mobile phones, today we are able to send and receive messages by E-mails via Internet. This provides cheaper, easier and quicker method of sending and receiving information. In addition, the technology also provides the facility to make video calls and video conferencing on computers and mobile phones. Computers have really changed the way people work. Computers handle many tasks in business, education, manufacturing, transportation and many fields. Computers process and produce new information so quickly and accurately that they are changing people's view of the world.

Automation in our society occurs in three stages: (i) we automate what we have been doing manually; (ii) we find what we do, is changing; and (iii) society changes in response to these forces (Martin, 1989). According to Martin, we need not worry on this account because libraries have always stood ahead in the use of technology. Hence, this development is a good prediction for libraries of 21st century and information society.

3.4 NEED FOR LIBRARY AUTOMATION

Information, as an essential input for development process, has been well accepted by scientists, technologists, researchers, teachers, etc., and becomes valuable only when it acts upon its target user in time.

Any planning and development activity needs quick access to right information, whereas, searching and retrieving information manually is tedious and time consuming. The options available are either to process and store information electronically or rely on accessing large databases remotely to meet users' urgent needs. Hence, we are forced to depend on some means to ease the process and in this context automation is the only solution. Recognizing this need, librarians have started thinking seriously for automating their library activities, which enables them to put their entire collection for the timely interaction of the users with the system. The need for automation arises due to:

- literature explosion and information overloads;
- need for handling large amount of data/information;
- complexity and scattering of information;
- interdisciplinary nature of research and information;
- speedy processing of information and its retrieval;
- flexibility in information search;
- better bibliographic control at local/regional/national/international level;
- economic implications of new information technology;
- geographical and other barriers to communication;
- optimum utilization of available resources either inside or outside the library;
- improve the existing services (from the point of quality, user friendliness, regularity, etc.);
- avoid duplication of work; and
- utilize the services of the existing staff effectively.

3.5 LIBRARY AUTOMATION

Library Automation refers to the phenomenon of mechanization of traditional library activities, such as, acquisition, cataloguing, circulation, serial control, etc. In other words, library automation refers to the use of computers and other technologies to minimize human intervention in the functioning of a library. Library automation may be defined as the application of computers to perform traditional library housekeeping activities such as, acquisition, cataloguing, circulation, and serials control.

The main reasons or purposes of library automation are to:

- increase operational efficiency of the library;
- cope with increasing demand for services;
- improve the quality of services;

- provide new services which are otherwise not possible;
- improve the management of information products and services;
- facilitate wider access to information for the users;
- facilitate wider dissemination of information product and services;
- participate in resource sharing/ library networks and
- enable easy communication with other libraries and professionals.

The library entering into automation should examine the above reasons and prioritize them according to their work. As a strategy, prioritization of the reasons should be done in consultation with the user community, management and the library staff. This will help in building awareness among the users, and staff. This helps in seeking concurrence for implementation and adopting process. It is also important to look into various factors that influence adoption of library automation.

Although, computers have a major role in library automation, telecommunication and reprography technology have equally important role to play, because of the support they offer to library automation.

INTEXT QUESTIONS 3.1

1. Define Library Automation.
2. What are the main reasons for library automation?

3.6 AREAS OF APPLICATION OF LIBRARY AUTOMATION

Traditional library work consisting of acquisitions, technical processing, serials control, circulation and reference services entail time consuming manual work. Though, these activities are essential for proper functioning of a library, they consume considerable professional staff time that might otherwise go towards user services and library development. Moreover, this work consists of a number of inter-related activities, the data generated being useful in different sections. Manual work involves repetition of work in different activities. The aim of automation thus, is to integrate these activities and minimize repetition of work. Integrated library management software (ILMS) packages are available, which are used to automate libraries. ILMS package integrates all the activities and routines of a library.

The basic activities of library automation irrespective of the type or size of a library are:

(i) Acquisition

(ii) Cataloguing

(iii) Circulation

(iv) Serials Control, and

(v) Reporting.

The above mentioned activities are closely connected and are to be performed in a sequence that leads to better library services. Diagrammatically, a computerized integrated library management system with various operations is shown below :

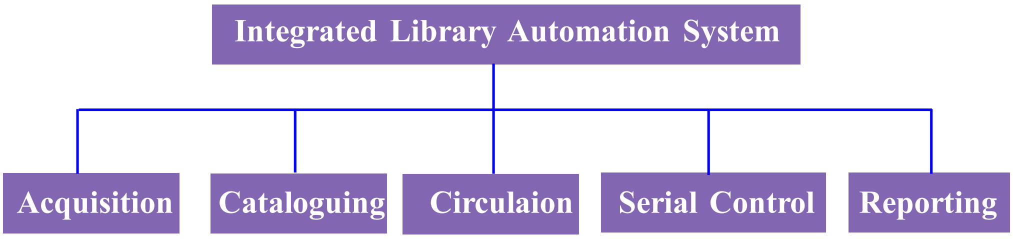

Fig.3.1: Integrated Library Management System

The main objectives of library automation are to improve the level of service and quality of output, and to fulfil needs that cannot be achieved by manual system, such as: (i) sharing of resources, (ii) information that appears only in electronic format (e.g. CD-ROM, Internet resources, databases, etc.

Let us discuss the main areas of applications of library automation in subsequent sections.

3.6.1 Acquisition

The acquisition division in a library acquires reading material (books, electronic material, maps, charts, etc). Other reading material including journals, newspapers, databases, e-books, etc. are acquired by the serials/periodicals division.

Manual acquisition system requires the maintenance of vast amount of data, innumerable files, records, etc., which involve tedious routine and repetitive tasks. The computers can perform these tasks faster and more accurately. The following are the main tasks in the acquisition section.

- Selection of documents
- Ordering of documents
- Create purchase orders
- Claiming/cancellation of documents
- Receiving/invoice processing

- Extended procurements
- Gift tracking
- Maintaining information about all library related funds
- Tracking fund allocations and adjustments
- Expenditure out of allocated funds
- Cash balance
- Updating of fiscal information through recording of specific transactions, and
- Tracking up-to-date expenditures.

In a computerized system, bibliographic data of a document once entered can be used for other routine activities such as, for duplicate checking, placing orders, receiving, accessioning and importing data to the catalogue module for entering cataloguing details. This avoids re-entering of bibliographic details for the same document, as is normally done for each activity in a manual system. All the above mentioned tasks are also carried out faster and more efficiently by the computerized system than the manual system.

3.6.2 Cataloguing

Once a book is received in the library, it is processed, beginning with accessioning followed by classification and cataloguing. Catalogues are the windows to the library collection and their automation has far reaching effect on the quality of services. In a manual environment, much valuable time of professional staff is invested in the preparation of cards for each book, sorting and filing of the cards. Checking for duplicate entries is another tedious and time-consuming process. In an automated system, once the relevant data is processed and is made available on the computer, the catalogue can be generated in a standard format. Then exchange records with other libraries as part of a library network and generation of various approaches is very fast and efficient. Checking for duplication can be done quite efficiently through computers as it facilitates search from any approach to any library material. The computerized catalogue can generate list of recent arrivals, print catalogue cards and prepare bibliographies.

(a) Online Public Access Catalogue (OPAC)

Cataloguing activities using ILMS produces an electronic catalogue, that provides access to catalogue for users, which is limited to search and display and is called an Online Public Access Catalogue.

OPAC is a computerized catalogue of library resources available to public for searching online. In other words, OPAC is an interactive search module of an automated integrated library management system (ILMS). OPAC is very dynamic, in the sense, that it is highly flexible, easy and economical to maintain and capable to meet almost every possible approach of the user. The searching capability is very fast and accurate.

Earlier OPACs were developed as standalone online catalogues, which users searched on the computer terminal available in the library. With the arrival of Internet, most of the libraries have made their OPACs accessible via Internet, which is accessible to users all over the world on 24X7 basis. Users can search OPAC remotely and find information online. The search facility apprises the users about the availability of each item for circulation, including current status of individual copies of a title and reserve status.

(b) Web OPAC

Connecting the web with the online catalogue is a natural and unavoidable goal for libraries today and these are called Web OPAC. Web OPAC is an OPAC which is provided on the Web and with the help of Internet any user can access it from anywhere.

Web OPAC is similar to OPAC in searching and browsing. The main difference between OPAC and Web OPAC is that OPAC can facilitate a user to access library materials from the library or campus of an Institute through Local Area Network(LAN), whereas, Web OPAC can be searched from any corner of the globe through Internet. In simple words, a user can search the library catalogue through Web OPAC anywhere in the world. For example you can search the catalogue of NIOS library by clicking the web link at http://220.156.188.239:8080/jopacv11/html/SearchForm

3.6.3 Circulation

Circulation section involves direct interaction between users and staff, and therefore requires efficient and speedy services. The main functions in the circulation section are as follows:

- Issue (charge) of documents
- Return (discharge) of documents
- Renewal of documents
- Loan periods of documents
- Processing schedules
- Hold of documents
- Message notices to users

- Transaction recording devices for off-line processing, and
- Inventory control.

The transactions at the circulation desk, such as: charging (issue), discharging (return), re-issue, reservations, over-due reminders and statistics, etc., are time consuming, highly labour intensive and error prone. Automation in circulation activities benefits the library. Barcode facilities tremendously improve the speed, efficiency and accuracy of the circulation transactions.

Circulation module works with the help of two master files, i.e. database of users and books. Integration of circulation module with library catalogue allows the library staff to know about the status of a document and also the details of the user in case it is issued to her/him. This facility helps to send notices for overdue books. Late fee calculation is another activity to be performed in circulation section for books returned after due date.

The trend these days is towards integration of circulation control systems with other functions such as online public access systems, inter-library loans, electronic mail reminders, book reservations, book status, etc. thereby, saving the time of users. These days radio frequency identification (RFID) has also been introduced for automation in circulation that also prevents theft of books.

3.6.4 Serials Control

Serials control is a very complex process involving large number of publications and expenditure to be handled. The following are the main tasks performed in the serials control section.

- Subscription of journals
- Subscription of e-journals & databases
- Subscription/renewals of journals
- Subscription/renewals of e-journals & databases
- Claiming of missing issues
- Replacements of journals
- Monographic serials, and
- Invoice processing.

Further, the problem of keeping track of receipts, reminders and non-receipt claims, periodicity change, merger of titles, etc., is quite a task to be managed manually, and thus, need special treatment under serials control.

Automation makes most of these tasks very easy and efficient. Apart from these, generation of many types of manually is time consuming and at times not at all possible, which is facilitated by the use of computers. For example, lists of

serials-subject-wise, frequency-wise, currency wise, country of origin, publisher-wise, etc., can be easily generated.

3.6.5 Reporting

In addition to the operations mentioned above, the Integrated Library Management System (ILMS) has to be managed in such a way that users get maximum benefit, safeguards are in place and timely access of material is ensured. The reporting module of ILMS includes the following.

- Various reports and statistics related to library activities
- Tools for the analysis of statistical information
- Maintains Lists of user, publishers and suppliers
- Stock verification and develops stock verification report, etc.

Besides the above, this module generates messages for library staff and users. It also generates reports on lost books, missing books, books sent for binding, and so on for the purpose of library administration.

INTEXT QUESTIONS 3.2

1. Enumerate different areas of library automation.
2. What is the full form of OPAC? How does it help a user?

3.7 SALIENT FEATURES OF AN AUTOMATED LIBRARY

A library after automating its routines should provide automated services to bring in the effect of automation to the front end (user). As discussed above in the circulation division, the bar coding of books and user details, enables the automated issue and return of books, which is the service any automated library provides. The salient features of an automated library are to:

- provide users with timely access to library materials;
- eliminate routine tasks or perform them more efficiently;
- reduce the amount of time spent on material acquisition, serials management, budget administration and record keeping;
- support new means of information retrieval by introducing users to global information;
- allow users to use search strategies that exceed those that can be used with card catalogue;

- allow users to search library's collection from locations outside the library's walls, and
- motivate users and equip them with problem solving and information retrieval skills.

INTEXT QUESTIONS 3.3

1. **Fill in the blanks with suitable answer.**

   a) An automated library provides users with timely access to ....

   b) An automated library eliminates ....tasks.

   c) An automated library reduces the amount of .... spent on material acquisition.

   d) An automated library supports new means of .... by introducing users to global information.

   e) An automated library allows users to use .... that exceed those that can be used with card catalogue.

   f) An automated library allows users to search .... from locations outside the library's walls.

   g) An automated library motivates users and .... skills.

3.8 DIGITAL AND VIRTUAL LIBRARIES

Today, libraries are much more than storehouses for books, journals, and newspapers, in print form. Present day libraries apart from print resources, acquire e-resources, audio/visual material, multimedia material and other resources depending upon the demands from the users. This change is evident in all kinds of libraries. However, one thing that has not changed is the universe of information or knowledge; it is forever expanding and is continuing to do so at ever increasing speeds. Digital and virtual libraries are the outcome of this speed. The following sections will explain digital and virtual libraries in brief.

3.8.1 Digital Library

There are many definitions of digital libraries, in simple words; a digital library is a library in which collections are stored in digital or electronic form and accessible on computers and other electronic devices. In other words, a digital

library is a collection of documents in organized electronic form, available for access on the Internet or on CD-ROM (compact-disk read-only memory) disks. Depending on the nature of a specific library, a user may be able to access magazine articles, books, papers, images, sound files, and videos using computers.

Digital libraries, like traditional libraries, select, acquire, make available, and preserve collections. The major differences are that digital libraries consist of resources in machine-readable form only. This implies that the traditional concept of collection must be revised to accommodate materials that are accessible electronically.

A Digital library is an organized collection of multimedia data with information management methods that represent the data as useful information and knowledge to people in a variety of social and organizational contexts. In general, the digital library is a structured, processed and organized digital repository of knowledge. Such a repository is created to serve the user community as the traditional library. One of the best examples of a digital library is, Digital Library of India (DLI).

DLI is a digital library of books, predominantly in Indian languages, available to everyone over the Internet. Books are searchable and free-to-read. In addition, it provides links to six online Indian newspapers such as Times of India, The Hindu, Indian Express, Deccan Herald.

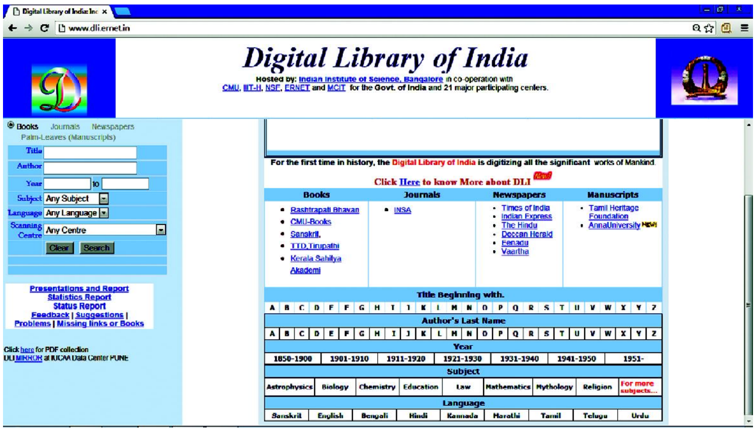

Fig.3.2: Snapshot of Digital Library of India < http://www.dli.ernet.in/>

Examples:

(i) Traditional Knowledge Digital Library, Ministry of Health & Family Welfare, Government of India. http://www.tkdl.res.in/tkdl/langdefault/common/Home.asp?GL=Eng

(ii) Digital Library of India http://www.dli.ernet.in/

(iii) Indira Gandhi National Centre for the Arts (IGNCA) Digital Library, New Delhi. http://www.ignca.nic.in/dgt_0001.htm

(iv) Vidyanidhi: Digital Library at Department of Library and Information Science, Mysore University, Mysore. http://www.vidyanidhi.org.in/home/index.html

3.8.2 Virtual Library

The virtual library is a collection of full text e-books, journals and databases from various publishers and sources which can be accessed by library members at any time from any Internet connected computer, laptop or other portable device. In simple words, **a virtual library is the library without walls.** It is virtual in the sense that it does not have any physical collection of resources. It aggregates distributed resources and provides links from its website.

The key characteristics of a true virtual library are given below:

- There is no corresponding physical collection.
- Documents are available in electronic format.
- Documents are not stored in any location of the library.
- Library only categorizes and provides links to these resources.
- Documents can be accessed from any workstation.
- Documents are retrieved and delivered as and when required, and
- Effective search and browse facilities are available on the website of the virtual library.

Virtual libraries often contain more up-to-date information than physical collections. Their sources can be searched more efficiently than those in physical libraries, and the information they contain can be updated more frequently. One of the best examples of a virtual library is WWW Virtual Library (Fig. 3.3).

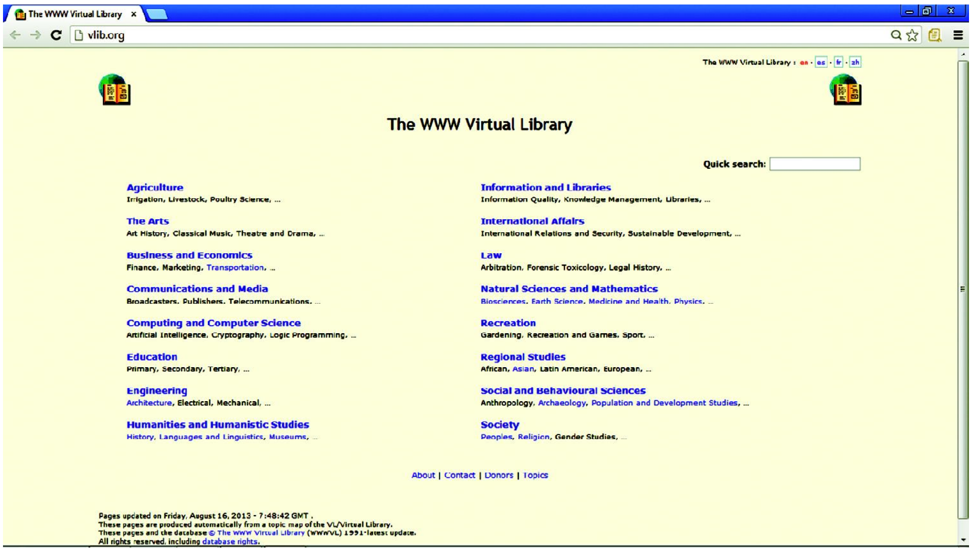

Fig.3.3: Snapshot of WWW Virtual Library < http://vlib.org/>

Examples:

(i) Mathematics WWW Virtual Library, maintained by the Florida State University Department of Mathematics. <http://www.math.fsu.edu/Virtual/>

(ii) Alabama Virtual Library < http://www.avl.lib.al.us/>

3.8.3 Digital Library Vs. Virtual Library

The terms digital library and virtual library are used interchangeably but it is not correct. They both have different characteristics which makes them different.

A digital library is a library consisting of digital materials and services. Digital materials are items that are stored, processed and transferred via digital devices and networks and are accessible using computers. A digital library has place based collection of e-resources and may have even print resources. It provides access to e-resources held in-house as well as provide links to e-resources held somewhere else. For example, Digital Library of India provides link to online edition of various newspapers.

On the other hand, a virtual library is the library which exists only virtually, that is, the library does not exist in real life. It consists of materials that are organized in a virtual space using computers and computer networks. The emphasis in virtual libraries is on organization and access, not on developing physical collections. For example, The WWW Virtual Library is a catalogue of web pages compiled by a confederation of volunteers, who compile pages of key links for particular area in which they have the expertise. Individual Web pages of these links reside on hundreds of different servers around the world. A set of catalogue pages, linking these web pages is maintained by the website of the virtual library at http://www.vlib.org/.

INTEXT QUESTIONS 3.4

1. What is a digital library?
2. List any two digital libraries in India.
3. What is a virtual library?

WHAT YOU HAVE LEARNT

- Computer technology has brought about many changes in the way we live in this present society.

- Computer based systems and telecommunication network continue to be used in more and more in libraries with the overall aim of providing better services to the user.
- Library automation may be defined as the application of computers to perform traditional library housekeeping activities such as, acquisition, cataloguing, circulation, and serials control.
- The main objective of library automation is to improve the level of service and quality of output.
- The main areas of library automation are: (i) Acquisition, (ii) Cataloguing, (iii) Circulation, (iv) OPAC, and (v) Serials control.
- A digital library is a collection of documents in organized electronic form, available for access on the Internet or on CD-ROM (compact-disk read-only memory) disks. Depending on the specific library, a user may be able to access magazine articles, books, papers, images, sound files, and videos using computers.
- A virtual library is the library which exists only virtually that is, the library does not exist in real life. It can consist of materials that are organized in a virtual space using computers and computer networks. The emphasis in virtual libraries is on organization and access, not on developing physical collections.
- A Virtual library is the library without walls and without any physical collection..

TERMINAL QUESTIONS

1. Discuss the need for library automation.
2. Briefly explain the areas of library automation.
3. What is the main difference OPAC and Web OPAC?
4. Describe the salient features of an automated library.
5. Distinguish between digital and virtual library.

ANSWER TO INTEXT QUESTIONS

3.1

1. Library automation may be defined as the application of computers to perform traditional library housekeeping activities such as, acquisition, cataloguing, circulation, and serials control.

2. The reasons for library automation are: (i) to increase operational efficiency (ii) to cope with increasing demand for services; (iii) to improve the quality of services; (iv) to provide new services which are otherwise not possible; (v) to improve the management of information products and services; (vi) to facilitate wider access to information for the users; (vii) to facilitate wider dissemination of information product and services; (viii) to participate in resource sharing/ library networks; and (ix) to enable easy communication with other libraries and professionals.

3.2

1. The main areas of library automation are: (i) Acquisition, (ii) Cataloguing, (iii) Circulation, (iv) OPAC, and (v) Serials control.

2. OPAC stands for Online Public Access Catalogue. It is a computerized catalogue of library resources available to public for searching online. In other words, OPAC is an interactive search module of an automated Integrated Library Management System (ILMS). OPAC is very dynamic, in the sense, that it is highly flexible, easy and economical to maintain and capable to meet almost every possible approach of the user. The searching capability is very fast and accurate.

3.3

1. (a) library materials, (b) routine, (c) time, (d) information retrieval, (e) search strategies (f) library's collection, and (g) equip them with information retrieval.

3.4

1. A digital library is a collection of documents in organized electronic form, available for access on the Internet or on CD-ROM (compact-disk read-only memory) disks.

2. Two digital libraries in India are: Traditional Knowledge Digital Library, and Digital Library of India.

3. A Virtual library is a library without walls.

GLOSSARY

Acquisitions The method of procurement of all types of library materials, whether by purchase, gift or exchange.

Barcode A barcode is an optical machine-readable representation of data relating to the object to which it is attached.

Cataloguing It is a process by which we render a collection of bibliographic materials arranged in a chosen order readily accessible to the users of the library.

Notes

Circulation Covers all the aspects associated with the borrowing of library materials by the users of the library.

IT Information Technology (IT) is the technology to access, store, process and transmit information. It includes processing and telecommunication technologies.

Serials Control The activities related to acquiring, processing and maintaining periodicals in a library.

OPAC Online Public Access Catalogue. It can facilitate a user to access library materials while in the library with the help of library automation software.

RFID Radio Frequency Identification (RFID) is the use of a wireless non-contact system that uses radio-frequency electromagnetic fields to transfer data from a tag attached to an object, for the purposes of automatic identification and tracking.

Web OPAC Web OPAC is an OPAC. It is accessible all the time from anywhere in the world with the help of Internet.

SUGGESTED ACTIVITIES

Visit the nearest University Library and do the following tasks:

(i) Observe and note down different library activities;

(ii) Find out ILMS being used by the University library;

(iii) Search a book title using OPAC;

(iv) List the different modules in ILMS;

(v) Enumerate the different functions in each module of ILMS, and

(vi) Issue a book using barcode scanner.

(vii) Visit website of Digital Library of India, search for mission, goal and current status of the library and prepare a write up of the same.

(viii) Visit Website of WWW virtual library and find out following information about it- How it started, where it is located, and who runs it?

WEBSITES

(i) Traditional Knowledge Digital Library, Ministry of Health & Family Welfare, Government of India.
<http://www.tkdl.res.in/tkdl/langdefault/common/Home.asp?GL=Eng>

(ii) Digital Library of India <http://www.dli.ernet.in/>.

(iii) Indira Gandhi National Centre for the Arts (IGNCA) Digital Library, New Delhi.

<http://www.ignca.nic.in/dgt_0001.htm>

(iv) Vidyanidhi: Digital Library at Department of Library and Information Science, Mysore University, Mysore.

<http://www.vidyanidhi.org.in/home/index.html>

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4

FIVE LAWS OF LIBRARY SCIENCE

4.1 INTRODUCTION

Dr. Shiyali Ramamritra Ranganathan (1892-1972) was an inventor, educator, philosopher, mathematician and a universal librarian. He made several significant contributions to the library profession. A fundamental contribution made by him, is the *Five Laws of Library Science.*

He formulated the *Five Laws of Library Science* in 1928 and published these in his famous book entitled, "Five Laws of Library Science" in 1931. He owes the First Law to Prof. Edward N. Ross, his mathematics teacher, and the other laws were enunciated by Ranganathan himself. In this lesson, we will discuss the basic philosophy of these laws and their implementation in library operations and activities.

4.2 OBJECTIVES

After studying this lesson, you will be able to:

- state the Five Laws of Library Science as given by S.R. Ranganathan;
- list the implications of each Law of Library Science in various library activities;
- describe how the guiding principles of library science apply to various library activities;
- illustrate the modern versions of the Five Laws by various experts;
- describe the relevance of the Five Laws in view of modern technologies; and
- explain the importance of the Five Laws for users and use of documents.

4.3 FIVE LAWS OF LIBRARY SCIENCE

The Five Laws of Library Science are the most influential concept in the field of library science. They are fundamental and discuss the basic philosophy of library science. They concisely represent the ideal services and organizational philosophy of all types of libraries, even today. These laws provide scientific basis and general principles which serve as guidelines to librarians in organizing and managing information products and services. The Five Laws given by Ranganathan are:

1. Books are for use.
2. Every reader his book.
3. Every book its reader.
4. Save the time of the reader.
5. Library is a growing organism.

These laws convey the fundamental philosophy of library science and convey a deep understanding of libraries. The basic tenet of these laws is to unite users with their desired information.

4.4 IMPLICATIONS OF FIVE LAWS OF LIBRARY SCIENCE

Let us now discuss in detail these five laws and their implications in library science.

4.4.1 Books are for use (First Law)

The First Law of Library Science is simple and states a self evident truth. In ancient and medieval periods, the use of books was limited and the emphasis was on storage and preservation rather than on use. The libraries were regarded as institutions for preserving the books. With the onset of post-industrial society, the concept of modern library came into being. The library is now regarded as a service institution to serve the social information needs of its users. Ranganathan did not reject the notion, that preservation and storage were important. But, he asserted that the purpose of such activities was to promote the use of books. By emphasizing on the use of books, he focused attention on access-related issues such as location, building, library hours, book selection, library staff, etc. Ranganathan suggests following methods for maximizing the use of books.

Implications of the First Law

(a) Library Location

A Library must be located in the midst of its users. If it is a public library, it should be located in the heart of the city. If it is an academic library, it would be wise to locate it centrally to enable accessibility to all the students. The surroundings must be free from noise and other disturbances which impede the use of library resources.

(b) Library Hours

The timings of the library depend upon the community it serves. The Law implies that the library be kept open for as long as it is possible. Opening and closing hours of the library should be adjusted to ensure maximum utilization of library resources.

(c) Library Furniture

Library furniture should be comfortable, functional and easy to use. The stack rooms should be made vermin proof, theft proof and air proof. The Law states that best reading facilities should be provided, like sufficient lights, fans and sound proof floor. It may vary from library to library, depending upon the nature of clientele to be served, like children or adults. This law enforces that the height of the book racks should be short enough, so that books in the topmost shelf can easily be picked by a person of normal height standing on the floor. Tables and chairs should be comfortable to the user.

(d) Book Selection

Book selection should meet the needs of the present and potential users. The selection should also consider physical appearance of the books and ease of handling. The books should be kept clean and in good condition. Worn out and obsolete books should be weeded out from the library collection from time to time.

(e) Library staff

The Law states that to disseminate knowledge and to put the books to maximum use, the libraries must have highly qualified and professionally trained staff. The First Law has the most vital effect on the library staff. Assisting the users to find and use library resources is the responsibility of the library staff, as most of the users do not know how to use the resources. To know the needs of the users, and teaching them use of library resources, is an essential task of library

staff. In order to put library material to maximum use, qualified staff in proper numbers with suitable status and emoluments is required. The staff should cultivate service attitude towards readers.

INTEXT QUESTIONS 4.1

1. Choose the correct answer.

   Who formulated Five Laws of Library Science?

   (a) Edward B. Ross   (b) S. R. Ranganathan

   (c) V.C. Vickery   (d) W.C. Berwick Sayers

2. Write a brief note on the implications of First Law on book selection.

4.4.2 Every Reader his Book (Second Law)

According to Ranganathan, if the First Law replaced the concept that, "books are for preservation", the Second Law widens the concept that "books for the chosen few." If the approach of the First Law is from 'books' point of view, the approach of the Second Law is from 'users' point of view. It emphasizes the availability of library services to every kind of reader, irrespective of age, sex, vocation, the capacity for self help and the ability to read.

Implications of the Second Law

It imposes a number of obligations on:

- The State,
- The Library Authority,
- The library staff, and
- The readers

(a) Obligation of the State

Establishment and maintenance of library systems and their development along proper lines is a State's responsibility. To meet this responsibility, the State has certain obligations. The first and the foremost is the library legislation. Through library legislation, the State can create the public library system in different areas by its policies and decisions, which makes adequate provisions regarding library cess, percentage of the cess to be collected from the people and grants to be given by the Government for library system. Legislation leads to cooperation

between libraries in a State and integrates them with State Central Library at the apex. This type of coordination strengthens their resources through inter-library loan, which enhances the efficiency and standard of service for the readers.

It also recommends making a provision for

- Union Library Act
- National Central Library Law
- Finance

The Law desires an integrated library grid (horizontal and vertical levels) of public library system.

(b) Obligation of Library Authority

The choice of the books and choice of the staff are the two necessary obligations of library authority.

(i) Choice of Books

Selection of books is determined by the demands of the users. Demand refers to the selection of reading material for a given library. It is the duty of the library authority to make necessary provisions to build up collection for the community to be served. A comprehensive user survey of different groups of people can be done in this respect. This will help to build up collection according to the tastes and interest of the readers.

(ii) Choice of Staff

Careful selection of books is not an ultimate aim of the library. To exploit these resources, competent library staff is needed. Only competent staff can satisfy the user's requirements and be able to locate books and other materials that they want. To implement the Second Law, the library authorities should make all possible efforts to recruit well qualified library staff at the stage of planning.

(c) Obligation of the Library Staff

The objectives of Second Law cannot be achieved unless the library staff discharge their obligations in an efficient manner. To perform their duties, the library staff has to adopt certain attitudes and practices to realize the word "His". Providing reading material is not the only duty of the library staff. The staff must ensure that readers get the material of their interest before leaving the

library. Besides this, the staff should try to know the readers, possess adequate knowledge of books and other collection of the library, to provide reference service and help readers in all possible ways. The Second Law puts another obligation on the library staff, i.e., to provide bibliographical, indexing, abstracting and other services to the users as per their requirements.

Catalogue is another facility that Second Law demands. Majority of documents are of composite nature in their treatment of subject and do not disclose fully all the contents. The catalogue is such a tool which reveals the hidden contents of such documents by cross reference entries and subject analytical entries. Otherwise, reader may not get this material in spite of best efforts. This requires that, the library catalogue should be fully analytical having necessary cross reference entries for the subjects covered in the documents.

Besides, other implications, the open access system will satisfy the expectations of this law, which enables the reader to decide what he should read. In open access system, books are kept on the shelves and are easily accessible to the reader. If a reader is not satisfied with a particular book, she/he can choose another suitable book. Thus, it will increase the chances for every reader to get the book of his/her choice.

(d) Obligation of the Reader

The Second Law imposes certain obligations on the reader towards library. It is the duty of the reader to follow the rules and regulations of the library in order to use and utilize library resources in an effective and efficient manner.

Thus, by fulfilling above listed four obligations, it becomes possible to provide every reader his book. The Second Law recommends that all the libraries of a country/region cooperate with each other and work as a single system. The entire documentary resources of a country should be regarded as a single pool of knowledge. Every book lying idle on the shelf of any library should be made available to readers.

INTEXT QUESTIONS 4.2

1. Choose the correct alternative.

   The Second Law emphasizes on _____________ of library services to every kind of reader.

   (a) liberalization (b) democratization

   (c) socialization (d) polarization

2. Write a short note on the implications of Second Law of Library Science in about 150-200 words.

4.4.3 Every Book its Reader (Third Law)

The Third Law stresses the maximum use of books by their readers. It urges that an appropriate reader should be found for every book. It is closely related to the Second Law, but it focuses on the book itself suggesting that each book in a library has an individual or a number of readers who would find that book useful. It is the duty of the library staff to bring the readers in contact with books. The Law advocates an open access system, classified shelf arrangement, subject analytical entries, provision of reference services, publicity methods, extension services and book selection policy.

Implications of the Third Law

(a) Open Access

In an open access system, the reader is allowed to select books/items on the shelves on his/her own. It increases the use of the books. Open access, thus helps in achieving the Third Law.

(b) Shelf Arrangement

The Law emphasizes the need to arrange the books on shelves in classified sequence based on their thought content. This arrangement brings books on the same subject together for easy browsing. If the shelf area is provided with well devised guides and labels, the use of each item increases.

(c) Easy Access

Another important factor helping every book to get its reader is that the books may be placed within the easy reach of the readers. The Third Law emphasizes that the height of the racks should not be more than the average height of the reader, i.e., the topmost shelf of a book rack should be within easy reach of a person of average height. The shelf should not have more breadth than required.

(d) Catalogue

The Third Law also advocates that the library catalogue should play an important role to provide every book to its reader. Subject analytical entries help in finding readers for a suitable book. There are series entries and subject cross reference entries. The series entries provide information about the whole set of books to the reader. In alphabetical part of the catalogue, all the entries having

the same series as the heading are brought together. In the classified part of the catalogue, subject cross reference entries help to find a specific reader for the documents having a subject as the heading. It also indicates that the book is placed under different subjects.

(e) Publicity

Publicity through annual reports, library bulletins and magazines, printed catalogues, subject book lists, list of latest additions, etc. is a powerful technique to attract the attention of readers to find every book its reader.

(f) Display of Books

The newly added books to the library should be displayed as it enhances the chance of every book to find its reader.

INTEXT QUESTIONS 4.3

1. What are the implications of Third Law of Library Science on "Open Access"? Write a short note.

2. Why do we need classified arrangement of books to find every book its reader? Give your answer in not more than fifty words.

4.4.4 Save the Time of the Reader (Fourth Law)

This Law requires that there should be no time lag between the demand received from the user and the document supplied. This Law makes its approach from the point of view of the user. It almost completely centres on the user from the moments he/she enters the library to the moments he/she leaves it. The objective of this Law is to save the time of the reader. To provide better services, it is required that, latest technologies in library operations be adopted and users be trained to use them independently.

Implications of the Fourth Law

(a) Classified arrangement

The classified arrangement of books in the stack room saves the time of the reader, as it is easy for a reader to find all books on the same subject arranged at one place for browsing. The arrangement of entries in the catalogue cabinet in classified manner, aids the reader to select the books easily from the respective shelves. The Fourth Law, therefore, calls for classified arrangement of books in the stack room.

(b) Catalogue Entry

In case of composite books, classified arrangement is sufficient to save objective time of the reader. The various facets of composite books can be brought to the notice of the reader by making cross references and subject analytical entries. Therefore, the Fourth Law calls for (i) classified arrangement of cards in the catalogue cabinet, and (ii) analytical entries for composite books. In order to save the valuable time of the reader, the Fourth Law also recommends a bipartite classified catalogue for this purpose, because readers have diverse approaches to find books, i.e., author, title, collaborator or series approach. In the classified part, the entries are arranged in the filiatory sequence, each subject is represented by an ordinal number, i.e., class number. In the alphabetic part, the author, title, collaborator and subject approach is provided.

(c) Open Access

The Fourth Law strongly opposes the process of the closed access system. It supports open access system for saving the time of the reader.

(d) Reference Services

The Law supports that the library staff should provide adequate personal help to their readers, such help is known as reference service. A reference library staff should have adequate professional knowledge and be active to serve their reader in an efficient and effective manner. The message "save the time of the reader" makes all necessary efforts to meet demands of the reader in least possible time with the help of reference cum guidance services. The reference librarian should be able to answer the queries of readers by providing ready reference service and long range reference service with the help of information tools. Therefore, a reference librarian should be humble, friendly, devoted and with a positive attitude to welcome every visitor to the library.

(e) Issue Method

Adopting efficient circulation system is another step towards saving the time of the reader. This enables maximum books being issued and returned in minimum possible time. The system used should provide answer to the following queries:

- What and how many books are lent on a given date?
- How many books have been loaned out to a given person?
- What books are due for return on a given date?

The Fourth Law recommends the two card system that answers all queries and eliminates wastage of objective time.

(f) Centralized/ Pre-natal Cataloguing

To save the time of the staff, Ranganathan has advocated pre-natal centralized cataloguing and classification. The law urges the library to evolve a uniform cataloguing code to make way for international cooperative cataloguing. It also supports the centralized documentation work at international level to save time, money and manpower.

(g) Stack Room Guides

To save the time of the reader, the library should provide an efficient system of guides in the stack room. The guides, along with placing tags, should enable the readers to find the books easily.

(h) Library Location

The Fourth Law also deals with the time taken by the readers to reach the library. It should be so located as to save the time of the readers. But, the location of urban area libraries is not always equally accessible from all parts of city due to geographical constraints. The Law demands setting up of the branch libraries and delivery stations for the same. In rural areas, a branch library can be as useful as in the town. The rural population can also be served by the mobile vans which serve the small libraries and delivery stations. All these libraries should be connected and operated with district central library.

Thus, this Law deals with the different aspects of library policy and administration for reducing the time factor in all the library activities. The devices proposed in the law are the best classification and cataloguing system, open access, shelf arrangement, stack room guides, reference service and central location of the library. The basic objective of all such measures is to save the time of the reader.

INTEXT QUESTIONS 4.4

1. Enumerate any three time saving devices according to Fourth Law of Library Science.
2. Where and why do branch libraries prove useful for the users?

4.4.5 Library is a Growing Organism (Fifth Law)

The Fifth Law states, “library is a growing organism”. It is an accepted idea that a library along with its services is a growing organism. This Law maintains that the library as an institution, has all the attributes of a growing organism, which takes in new matter, casts off old matter, changes in size and takes new shapes and forms like human beings. Since library is trinity of books, readers and staff, it is bound to grow in all three respects. Therefore, library authorities should plan the library building in such a way so as to make it easy to keep pace with the necessary growth in size of collection, number of readers and the members of staff.

According to Ranganathan, the growth of an organism can be of two kinds, growth as of body of the child and growth as the body of an adult. He compared the growth of a storage or repository library and service library to that of child and adult respectively. A child’s growth is characterized by the overall increase in size and weight. Similarly the building of a repository library should be capable of growth to incorporate additional material. On the other hand the building of a service library need not grow beyond a certain size, as is the case with the body of an adult.

Implications of the Fifth Law

(a) Growth in Size

As the body of a child grows steadily in size and weight, similarly a newly started library grows steadily in size in terms of reading material. The growth and size of reading material has effects on:

(b) Library Building

- Stack area
- Circulation area
- Reading room area, etc.

(c) Growth of Readers

The growth of a library is dependent upon the growth of its readers. The growth of readers affects:

- the size of the reading room
- the issue method
- certain safeguards (in case of open access system)

(d) Growth of Staff

With the growth in size of reading material and the readers, increase in the number of the staff is inevitable. The book selection activity, cataloguing section, binding section, periodical section and the reference section have to grow as the library grows. The Fifth Law advocates that the library authorities make all necessary provisions for growth of library staff in these sections.

The Fifth Law urges the library authorities to provide adequate well qualified and trained staff to serve its readers. It also supports the development and enhancement of the working environment in accordance with the latest tools and techniques in the working area.

INTEXT QUESTIONS 4.5

1. How can you compare a library to a growing organism?
2. What are the implications of fifth law of library science on the size of a library?

4.5 MODERN VERSION OF LAWS IN DIFFERENT CONTEXTS

Looking through the library literature, one can see clearly the same Five Laws discussed, reused, or re-worded in different contexts.The American interpretation of Ranganathan's Five Laws of Library Science as given in 1975, is as follows:

1. Books are for use.
   (Tapes, films, records, relic and books are for use in the information delivery system)
2. Every reader his book.
   (Every Reader his/ her medium)
3. Every book its reader.
   (To every tape, record, etc. its utility)
4. Save the time of the reader.
   (Save the down time of the patron)
5. Library is a growing organism.
   (A learning resources center is a growing organism)

In 1992, James R. Retting devised a Sixth Law as an extension of Ranganthan's Five Laws. The Sixth Law is "Every reader his freedom".

Jim Thompson (1992) revised Ranganathan's Laws as follows:

1. Books are for profit.
2. Every reader his bill.
3. Every copy its reader.
4. Take the cash from the reader.
5. The library is a growing organism.

Kuronen and Pekkarinen have suggested two supplementary (6th and 7th) Laws to Ranganathan's Five Laws:

6. Every reader his library.
7. Every writer his contribution to library.

In 1998, Michael Gorman and Wait Crawford focused on the validity of the Five Laws and suggested five new laws as an extension of the first Five Laws. These are:

1. Libraries serve humanity.
2. Respect all forms by which knowledge is communicated.
3. Use technology intelligently to enhance services.
4. Protect free access to knowledge.
5. Honour the past and create the future.

In 2004 Alireza Noruzi applied Ranganathan's Five Laws to the web in his paper "Application of Ranganathan Laws to the web". They are:

1. Web resources are for use.
2. Every user his or her web resources.
3. Every web resource its user.
4. Save the time of the user.
5. The web is a growing organism .

In 2008, Carol Simpson revised these laws and applied them in the field of media They are:

1. Media are for use.
2. Every patron his information.

3. Every medium its user.

4. Save the time of the patron.

5. The library is a growing organism.

4.6 FIVE LAWS AND MODERN LIBRARIES

In automated libraries, OPAC (Online Public Access Catalogue) fulfills all the laws of library science. Sitting at a computer terminal, a user can search the entire collection of the library and gets to know if the required document is available in the library or not. User can reserve a book, recommend a new title to be purchased and renew a borrowed book. If it is WEBOPAC, the user can access the library collection from anywhere, anytime (24 hours on all days of the week). Here, the library goes to the user instead of the user coming to the library. Library networking has brought the collection of various libraries together in the form of a union catalogue of resources. For example, in DELNET (Developing Library Network), resources of over 4,000 libraries are accessible to its users from its website available at www.delnet.nic.in.

INTEXT QUESTION 4.6

1. What do you understand by modern version of laws in different contexts?

WHAT YOU HAVE LEARNT

- Ranganathan enunciated the normative principles, known as Five Laws of Library Science for all kinds of library work. These laws serve as a guide to the librarians in policy making, planning, programming at every stage both at micro as well as macro levels to make their library an ideal place for reading. These are universally accepted as fundamental laws for all kinds of libraries.

- The first law constitutes the basis for library services. Ranganathan observed that books were often chained to prevent their removal and that the emphasis was on storage and preservation rather than use. He did not reject the notion that preservation and storage were important, but he asserted that the purpose of such activities was to promote the use of the materials. There is little value in an item, if it is not used.

- The second law suggests that every member of the community should be able to obtain material needed. Ranganathan felt that all individuals from

all social environments were entitled to library service, and that the basis of library use was education, to which all were entitled.

- This principle of the third law is closely related to the second law but it focuses on the item itself, suggesting that each item in a library has an individual or individuals who would find that item useful. Ranganathan argued that the library could devise many methods to ensure that each item found its appropriate reader.
- The fourth law advocates that part of the excellence of library service, is its ability to meet the needs of the library user promptly and efficiently. To this end, Ranganathan recommended the use of appropriate business methods to improve library management.
- The fifth law focused more on the need for internal change than on changes in the environment itself. He argued that library organizations must accommodate growth in staff, the physical collection, and patron use.
- Modern version of these five laws has been discussed, reused, and reworded in various contexts by different authors, which includes James R Retting, Kuronen and Pekkarinen, Michael Gorman, Wait Crawford, etc.
- Modern libraries which are automated and networked, aim to fulfill all the Five Laws of Library Science.

TERMINAL QUESTIONS

1. Explain the fourth law of library science and its implications on library activities and operations.
2. "Library is a growing organism" is fifth law of library science. What is its implication on library building and furniture?
3. Explain how modern libraries fulfill the five laws of library science.

ANSWERS TO INTEXT QUESTIONS

4.1

1. S. R. Ranganathan Option (b).
2. The first law says that Books are for use. Books can be used only if the library selects appropriate books as per demand and choice of the users.

The book selection should meet the needs of the present and potential users of library. Worn out and obsolete books should be weeded out from the library collections from time to time. Therefore, a library should select and procure books by taking due consideration of first law of library science "Books are for use".

4.2

1. Democratization (option b)

2. The second law emphasizes on the user and states that books are not only for use but books are also for all. It advocates that every reader has equal right of access to knowledge whatever the age, sex and vocation he/she belongs. Books are not the monopoly of one man or groups or sections of the society. It emphasizes on democratization of library service.

4.3

1. Open access system helps in achieving the objectives of third law of library science. In this system, books are arranged on open shelves in classified order and readers have lot of freedom to see books according to their choice, needs and interest.

2. We need classified arrangement of books to find every book its reader because, in this system books on shelves are arranged in classified sequence based on their contents so that related subjects may also appear. It increases the use of library collection by the reader at a time. It is also necessary that the books taken out from the shelves should be again filed back at right place and be available to the readers.

4.4

1. Three time saving devices according to fourth law of library science are:

(1) Open Access (2) Reference Service (3) Stack Room Guide

2. In big cities and metropolis branch libraries can serve users at different parts of the city. Similarly, rural areas can make optional use of branch libraries.

4.5

1. A. Library is a growing organism and its size grows because universe of knowledge is ever growing and coming up with new subjects from time to time. Every library grows in size regarding books, periodicals, book racks, physical form of catalogue in the card form and so on.

2. A library building should be planned on a long term basis, keeping in view the present and future requirements of people who use the library.

4.6

1. In the modern version of laws in various contexts, Ranganathan's five laws have been re-interpreted and reused or reworded in various contexts by the authors/philosophers of library science. James R Retting even devised a sixth law of library science "Every reader his freedom" in 1992.

GLOSSARY

Catalogue: It is a list of documents available in a library, arranged according to scheme of classification or any other sequence.

Classified Arrangement: In classified arrangement, books are arranged on shelves subject wise, along with related subject in consecutive row.

Filiatory Sequence: Library collection is arranged subject-wise and is placed on shelves for use in the library. Library classification is a system that arranges the documents in filiatory sequence. In this context, filiatory sequence refers to arrangement of documents in a subject and its subordinate concepts without any interference.

Objective Time: Objective time is the time actually spent in the library.

Open Access System: In this system a reader is allowed to select books of his/her choice or interest among the books from open shelves.

Reference Service: Reference service is provided in anticipation and on demand by the library to its users. In this service, a user is either given an answer to his/her query or is provided with a document.

SUGGESTED ACTIVITY

1. Visit any library and observe the building, services, classification and cataloguing scheme of that library and prepare a report with reference to Five Laws of Library Science.

WEBSITES

1. http://en.wikipedia.org/wiki/Five_laws_of_library_science
2. http://libraryscience4ugcnet.wordpress.com/tag/five-laws-of-library-science/
3. http://www.aallnet.org/main-menu/Publications/llj/LLJ-Archives/Vol-95/pub_llj_v95n03/2003-28.pdf

5

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OVERVIEW OF INFORMATION SOURCES

5.1 INTRODUCTION

We use and share information when speaking, listening, watching, writing or by other methods. We require information in our day-to-day activities — such as, for study, research, problem solving or even entertainment. Have you ever wondered how information is generated, accumulated and made available to us? Well, people acquire knowledge through study and experience and make their views, observations, experimental research results, etc. known to other human beings by writing or other means of communication.

Information is generated from all kinds of human activities. Individuals and organizations, both generate information for some purpose or the other. For example, R &D organizations carry out research and generate new information. Government organizations, through their various activities, such as governance, administration, census and surveys, generate information. This way information is being generated and recorded in variety of sources and is made available for public use.

In this lesson, you will study the concept of information, its characteristics and use in different contexts along with various types of information sources, their development and importance in study, research, recreation and personal development.

5.2 OBJECTIVES

After studying this lesson, you will be able to:-

- define Information and Information Sources;
- state the characteristics of Information Sources;

- distinguish between Primary, Secondary and Tertiary Sources of Information;
- identify documentary and non-documentary sources; and
- trace the history of development of information sources.

5.3 DEFINITION OF INFORMATION

Collins English Dictionary defines information as 'i) knowledge acquired through experience or study, ii) Knowledge of specific timely events or situations- such as news, iii) The act of informing or condition of being informed – by an office, an agency, etc. iv) A collection of facts or data- such as statistical information, and v) processed, stored and transmitted data- such as in computer science, etc.'

The above definitions show that information is a term with many meanings depending upon the context and is closely related to concepts such as knowledge, instruction, data and communication. In terms of communication, information is a message received and understood. In terms of data, it can be defined as a collection of facts from which conclusions can be drawn. In terms of knowledge, it is something, which we acquire individually through experience and education. However, knowledge is personal, individual and involves practical use of information. It can be shared but might be perceived differently.

By going through the above definitions, we may define that facts, conclusions, ideas, and creative works of human intellect and imagination that have been communicated formally or informally in any form, is 'information.' Information can be transported, stored or shared without any difficulty. Today, we can access and find information on almost everything.

5.4 INFORMATION SOURCES

The sources from where we get information are called information sources and these comprise documents, humans, institutions as well as mass media like radio and television.

The most important informal form of sharing information is by personal communication, where people make their thoughts and wishes known to each other. People communicate in many ways, for example by talking, writing letters, making telephone calls and also through Internet. People all over the world share views, ideas, observations, experimental research results, etc. with fellow human beings.

Apart from personal communication, we all depend on other sources of information for news, study, research and entertainment or even for solving our

day-to-day problems. Some of these sources are newspapers, books, magazines, CDs, DVDs, radio, television, Internet, etc. At present, a wide range of these sources are available and all of us depend on these recorded information sources as well as on mass media like television and radio for getting information.

We can get information from various institutions. For instance, before taking admission we consult educational institutions like schools, colleges and universities. Apart from academic institutions, several government organizations, health institutions, R&D organizations, S&T Institutions, Industries, etc. serve as useful source of information in their respective areas of activities.

All of us have seen and used many of these sources. In this lesson, you will study these information sources; categorize them based on their type, information contents and physical form. You will also study the historical development of these sources.

INTEXT QUESTIONS 5.1

1. What is Information?
2. What are Information Sources?

5.5 TYPES OF INFORMATION SOURCES

Information sources are organized according to their information contents, type, media or form to cater to the different needs of the users.

We can group information sources into two broad categories as follows:-

- Documentary Sources
- Non-Documentary Sources

5.5.1 Documentary Sources

All recorded sources of information, irrespective of their content and form, come under documentary sources. These may be published or unpublished, in print or in electronic form. These may be books, periodicals, magazines, or reference books and others.

Documentary Sources can be further categorized based on their information contents and physical form as follows:-

- Documentary Sources (By Content)
- Documentary Sources (By Form)

INTEXT QUESTIONS 5.2

1. What are documentary sources?

2. How documentary sources are further categorized?

(a) Documentary Sources of Information (By Content)

All recorded sources of information such as books, periodicals, articles, dictionaries, newspapers, dissertations, guidebooks, directories, etc. are organized into quite basic and fundamental categories based on their information content and organizational level. These are:—

- Primary
- Secondary, and
- Tertiary sources of information.

(i) Primary Sources

Primary sources are those sources which contain original information that has been published, reported or recorded for the first time. Primary sources include raw data, new interpretation of previously known facts or idea, any new observation or experiment, etc. Information tends to be latest and comes out in the form of an article in a periodical, monograph, research report, patent, dissertation, reprint of an article or some other work. By its very nature, the primary sources of information are widely scattered and it is difficult to locate the information contained in them. Following is the selected list of primary sources of information:-

- Periodicals
- Newspapers
- Technical Reports
- Dissertations
- Conference papers
- Patents
- Standards

Problems of Primary Sources

Primary sources are widely scattered and are available in such a large number

that it is extremely difficult to keep track of all that is published even in a single discipline. To solve this problem, this widely scattered information in primary sources is constantly being compressed, organized and rearranged according to some definite plan and communicated through another set of publications called secondary sources of information.

(ii) Secondary Sources

Secondary sources of information are mostly dependent upon primary sources of information for their existence. They usually present the contents of primary documents in condensed form or list them in a helpful way so that existence of primary documents are known and access to them is made easy. Based on the reorganization of information in these sources, the secondary sources can be grouped under four broad types:-

- Index/Abstract Type
- Survey Type
- Reference Books
- Technical Translations

Index/Abstract Type

The word 'index' is derived from the Latin word 'indicare', which means to 'point out' or 'to show'. Index types of secondary sources scan the primary sources, select the relevant items and arrange them in helpful sequence for easy and quick retrieval. Under this category, indexes, bibliographies, indexing and abstracting periodicals, and current awareness services are covered. These are secondary publications which list and arrange the relevant items from the primary documents for easy and quick access. For instance, indexing and abstracting periodicals systematically scan the current primary sources of information (like periodicals, research reports, conference proceedings, etc.) on a particular subject field, select the relevant items, index (or provide brief summary of) each item, and arrange it in a helpful sequence so that each item can be easily located and identified. Indexing and abstracting periodicals are brought out at regular intervals and keep users abreast of the current literature on a subject and serve as important guides to the primary literature. Without these secondary sources, a large part of primary literature may remain unknown and unused.

Survey Type

These publications survey the selected portion of primary literature and provide

- An overview of the subject
- Highlight significant literature on the subject (Treatises)
- Depict the progress of a particular field of study (Annual Reviews, advances, etc.) or
- Present the contents of primary literature on a subject in easy and understandable form keeping in view the particular group of users. (Textbooks)

Reference Books

Reference books/sources provide answers to factual queries, statistical information, and background information on a special or general subject. Sources like dictionaries, encyclopaedias, directories, yearbooks, almanacs, maps and atlases etc. come under reference sources. These sources are used for finding out facts on a topic. These sources often have the subject headings in alphabetical order for finding the information quickly. These sources are used for consultation and not for continuous reading. These are not available for a loan from the library.

Translations

Whenever a primary source is translated into another language for the benefit of the users who are not familiar with the language of the original source, the translation becomes a secondary source. Some primary research periodicals in Russian, Chinese, and Japanese languages are translated cover-to-cover in English for English speaking users.

(iii) Tertiary Sources

Tertiary sources are based on primary and secondary sources of information and serve as key to the primary and secondary sources. Tertiary sources are usually compilation from primary or secondary sources and help the searcher to select required primary or secondary source which will be most relevant for his purpose. These publications do not carry subject information but guide the users to the source where information on that subject will be available. Under tertiary sources of information come publications like ‘guide to the literature’, ‘guides to the reference sources’, bibliography of bibliographies, etc.

In the order of appearance, first primary sources are published, then based on primary sources, secondary sources are compiled. Tertiary sources are third in the order of appearance and these sources are based on primary as well secondary sources and serve as guide to primary as well secondary sources.

INTEXT QUESTIONS 5.3

1. How do you categorize documentary sources by content?
2. What are primary sources? Discuss with examples.
3. What are secondary and tertiary sources? What purpose do they serve?

Notes

(b) Documentary Sources of Information (By Form)

Based on their physical form, recorded sources can be broadly grouped into:-

- Paper Based Documentary Sources; and
- Documentary Sources on Other Media

Paper Based Documentary Sources

Paper based documentary sources include published as well as unpublished sources. Published sources are those sources which are printed in large number of copies by publishers. These sources are usually priced and meant for public use.

Unpublished sources are not printed. Only a few copies are produced which are meant for restricted circulation. Examples of unpublished sources of information include thesis and dissertations, technical reports, manuscripts, etc. These are further described in Lesson 6 of this module.

Documentary Sources on Other Media

As we are aware, recorded sources are available in a wide range of formats, which may be audio, audio-visual, electronic media, optical media or microforms. We can categorize these into the following:-

a) Sound or Audio recording: Audio cassettes, Audio tapes, etc.
b) Visual images Still: Slides; Filmstrips; Transparencies; Photographs.
c) Visual Images- Moving: Films; Videotapes; Video disks, etc.
d) Artifacts and Realia: Globes; Relief models, etc.
e) Electronic Media: Magnetic tapes, Discs, Drum, etc.
f) Optical Media: CD-ROM, DVD, Blu-ray Disc, etc.
g) Microforms: Microfilms, microfiche, etc.

Information sources in different formats serve different purposes. Some of them are used as supporting tools for teaching and learning, some for archival purposes and some of them are used as storage devices.

Different audio-visual aids, which one can hear as well as see, enhance learning process. It has been observed that on an average you can retain 10 % of what you read, 30 % of what hear and 50% of what you hear as well as see and 90% of what you do.

Visual aids such as slides, transparencies, photographs, etc. are very effective in conveying information and message particularly to people who cannot read. Moving visual images like films, video tapes, video discs, etc. are more effective in information transfer than the still images like photographs, transparencies, slides, etc. CD-ROM (Compact Disc Read Only Memory) and DVD (Digital Versatile Disc) are good storage as well as learning devices. One CD-ROM (12 cm in diameter) can store as many as 325,000 pages of information. You will learn more about these sources in subsequent sections.

Microforms contain reduced images of books, maps, charts or photographs. Microforms presently are used for preservation of information contained in old and rare documents. For reading what is stored in microforms, you need a microfilm reader printer, which enlarges the image so that it can be read by naked eye and printed if desired.

Sound or Audio Recording: All of us are familiar with audio cassettes and audio tapes we use at home for listening to music. Now to enhance learning many publishers are offering their books in print as well as in other media such as on audio cassettes, CD, MP3-CD, and cassettes. Some websites offer free audio books, which one can download on iPod, MP3 player, and smart phone. (http://www.booksshouldbefree.com/)

Artifacts and Realia

Artifacts are hand crafted objects made by human skill or works that are historically and archaeologically interesting, for example a tool, cave painting, etc. 'Realia' is a term used in library science and education to refer to certain real life objects. For example, different types of woods or fabrics or coins or any other object that help in understanding things better are termed 'realia'.

Electronic Media

Electronic media are media that require electronics or electromechanical energy to access the content by the end-user. The primary electronic media sources

cover video-recordings, audio recordings, multimedia presentations, CD-ROM, and on-line presentations. Although the term is usually associated with content recorded on storage medium, recordings are not required for some electronic media like live broadcasting and online networking. Any equipment used in electronic communication process (such as television, radio, telephone, desktop computer, video games, console, and handheld devices) also comes under electronic media.

Magnetic Storage Media

Magnetic storage devices store data on surface coated with a magnetic substance. This covers analog as well as digital magnetic storage media. Magnetic media include audio and video recordings which contain reel-to-reel tapes, audiocassette tapes and video tapes which magnetically store sound and pictures. Three common types of magnetic storage devices are tapes, discs and hard drives. Tapes were the first type of magnetic storage media. It is either reel-to-reel or in cartridge form. Tapes are inexpensive type of magnetic storage but they are slow. You must either rewind or advance the tape to access the required data. Tapes now have limited role because magnetic disc has proved to be a superior storage device. Further in discs, data can be accessed directly as opposed to data on tape, which can be accessed only sequentially. Discs like floppy discs transfer small amount of data either between computers or to backup discs. Nearly all computers used to have floppy drive, but they have since been replaced by CDs or DVDs or Blu-ray Disc. Hard drives can store vast amount of data and are called random access device, which means you don't have to search through hard drive to find data before retrieving it.

Optical Storage Media

Optical media are storage media that hold the content in digital form and the content are written and read by LASER. These media include CD-ROM, DVD Blu-ray Disc and all variations of the first two formats, such as CD-R (Read only), CD-RW (Re-writable), DVD-R, DVD-RW, etc. A DVD has more data storage capacity than a CD and has better sound and picture quality. A CD has storage capacity of about 700 MB where as a DVD can store about 4.5 GB of data. CD-R and DVD-R record data only once and the data become permanent on the disc. Some discs, such as CD-RW and DVD-RW are re-recordable. The data on these discs can be erased and re-recorded a number of times without damaging the disc. Blu-ray Disc is a high density optical storage device and can store 25 GB (single layer) to 50 GB (double layer) data on a single disc. Blu-ray Disc is used as a recording medium for video material, such as feature films.

Microforms

Microforms contain reduced images of books, newspapers, maps, photographs, etc. for storage and preservation purposes. In microforms, the text or images of the documents are photographically reduced. When it is in the form of roll film (similar to the film in ordinary camera) it is called microfilm(fig.5.1) When it is in the form of a flat card size sheet (4x6 inches) it is called microfiche (fig. 5.2) Because these images are reduced in size microform can store large amount of information in a small place. The material recorded on the microfilm can be read by using a *microfilm reader.* This machine enlarges the image on the film and projects them onto a built-in screen. In libraries, very old, valuable and fragile documents are often microfilmed to provide public access to these documents without risk to the originals.

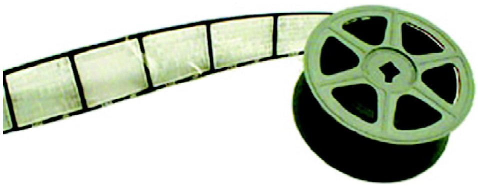

Fig. 5.1 A roll of microfilm

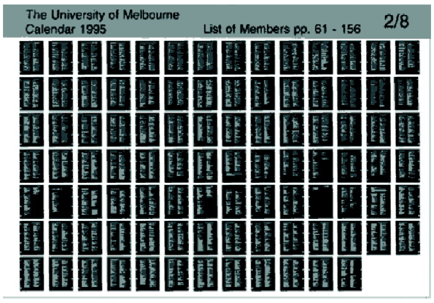

Fig. 5.2 A Microfiche

INTEXT QUESTION 5.4

1. How do you categorize documentary sources by physical form? List the categories with examples.

5.5.2 Non-Documentary Sources

Non-documentary sources of information are those sources which are not recorded in any form. Under this category come:-

i) Humans

ii) Organisations

iii) Mass Media other than print media, and

iv) Internet

Humans

Humans serve as useful sources of information for latest information which has

not been recorded in any form. Humans, ranging from experts to common man act as important sources of information depending upon the nature of information required. For instance, in case of an accident, the people who are present at the accident site can serve as useful witnesses. Similarly, an expert's opinion is very valuable, when a researcher encounters some problem while carrying out research and a solution is immediately required.

Organisations

Organizations are important sources of information. Organizations like academic institutions, R&D institutions, museums, archives, publishing houses, government establishments, etc. provide authentic, reliable and timely information in their specific area of activity. Such information at times is not available elsewhere.

Mass Media

The medium by which news and information, etc. is communicated to general masses, i.e., the public, is called mass media. Mass media includes press (newspapers, magazines, etc.), radio and television. Of these, radio and television have been found most effective. The main advantage of television is that it brings sight, sound and action directly to users in their homes. Radio stations located at various regions in the country broadcast news (local, regional, national and international), entertainment, musical, sports and educational programmes of various kinds. Radio stations broadcast suitable programmes for all groups of people including men, women, children, farmers, professionals and others. Similarly, television is the most popular mass media offering range of programmes through hundreds of channels. You must have noticed that there are special television channels devoted exclusively to telecast news, movies, music, sports and games, religious discourses, tourism and travel, fashions and styles, wildlife, history, science and technology.

Internet

Internet is another very important source of information. Internet is interactive digital media and is different from the traditional media such as print and television. World Wide Web (WWW), also called Web, is collection of websites on the Internet. WWW offers information on any topic you want. Whatever the topic may be, Web always has some website on that topic. The Web gives you latest news of any event in any part of the world. Often, news is available before it is broadcast by other media. The Web is a source of information for companies, business houses, educational institutes, government departments and individuals. Many educational institutes in India and abroad put useful information on the Web, such as about their activities, courses offered, fee and

other details. On this media individuals can interact, exchange ideas, share information, provide social support, and conduct business. Using Web you can shop, operate bank accounts and transact business, purchase airline, rail tickets, and even cinema tickets, play games, watch movies, listen to music and much more.

Type of Information Sources

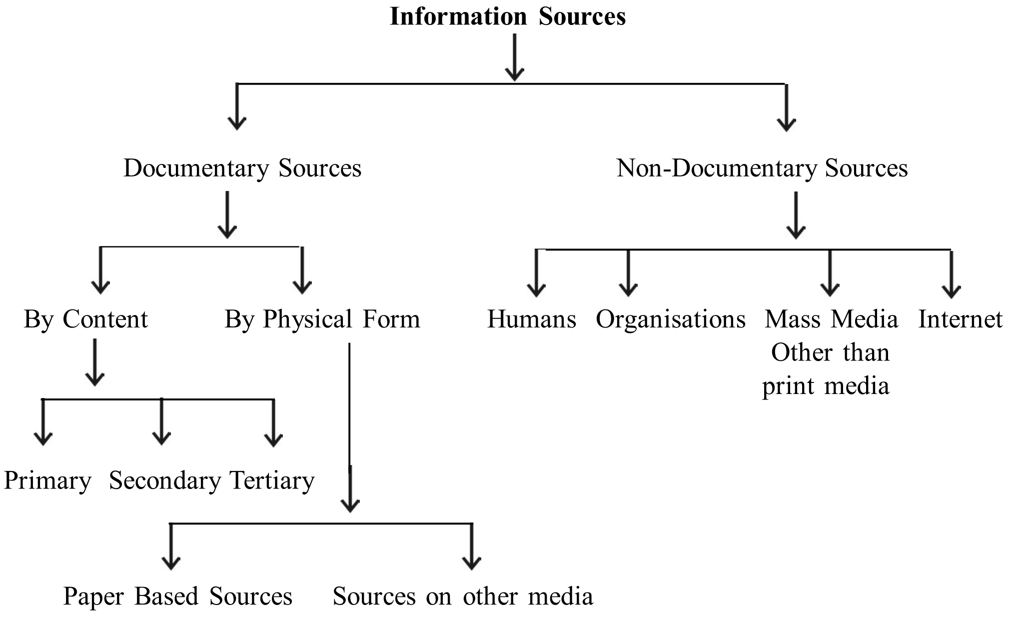

Fig. 5.3 Types of Information Sources

INTEXT QUESTIONS 5.5

1. What do you understand by non-documentary sources?

2. List the categories of documentary sources.

5.6 DEVELOPMENT OF INFORMATION SOURCES-HISTORICAL OVERVIEW

You have learnt in the previous sections about different sources of information and how we categorize them. The description of information sources is not complete until we study how these sources have developed over a period of time. In this section you will study in brief, the historical development of these sources.

5.6.1 Early Books

Before the invention of paper in 105 A.D. by the Chinese, the media and methods of recording information were different. People used cave walls or stones, clay tablets, metals (lead, copper, brass and bronze), linen, wooden boards, wax coated wooden tablets, papyrus, parchment and vellum till the invention of paper. People in India used palm leaves. The ancient Hindu religious writings called the 'Vedas' were originally written on palm leaves.

Invention of paper in 105 A.D. by Chinese is landmark in the history of writing media. The Chinese art of papermaking spread to other parts of the world. People started using paper for writing. Earlier books were written by hand by professional writers called scribes. Most books written during that period (400 A.D. – 1400 A.D.) were decorated with beautiful, colourful designs and pictures drawn on each paper. Because of the high cost and time involved in making these books, the books were not available for public use. Only a few privileged people like religious leaders or rulers belonging to royal families had access to these books.

5.6.2 Development of Printed Books & Other Sources

The Chinese made the first known printed book called *Diamond Sutra* in 868 A.D. using **block printing** method. The book as we know today resulted from the invention of printing with *movable type printing press,* developed by **Johannes Gutenberg and his associates,** in 1450 A.D. in Europe. With the invention of printing press, it became possible to print books quickly and in large numbers. The books became available to masses. Printing quickly became the most important means of mass communication. Printed books also brought many changes in libraries. Books gradually replaced handwritten manuscripts. The books were put on open shelves, not in chest, as the manuscripts had been kept in the past. By 1600, libraries had started to look like present day libraries. In 1600 A.D., the art of printing was also used in business. Printed news sheets appeared in the Netherlands and other trading nations, which reported mostly business news like 'which ships had landed' and 'what goods they carried'. The news sheets also included advertisements. These news sheets soon added non-business news and became the first true newspapers.

5.6.3 Emergence of Periodicals

During early 17th Century the scholars and scientists who carried out research, published their findings in the form of books. They found that this medium was unable to disseminate research results quickly. Each scientist had to work for years to collect enough findings, so that these could be published in the form of book. The only other way they communicated with their fellow scientists

about their research was, by writing letters to them or by meeting them in conferences. This was informal communication. They needed a formal and quicker medium to disseminate their research results to avoid duplication of research effort and establish priority in announcing their invention. This led to the publication of periodicals. The first periodical was *'Le Journal des scavans'* (Journal of Learned Men), which was published in January, 1665. It was in French language. In the same year, The Royal Society of London published a monthly scientific periodical *'Philosophical Transactions'*. The first issue was published in March, 1665. These two journals served as models for subsequent scientific periodicals founded by learned societies and academic institutions.

5.6.4 Emergence of Electronic Sources

In late 1800's, a number of inventions, like typewriter, telegraph, and telephone helped quicker dissemination of information. By using the telephones and telegraphs, one could send long distance messages instantaneously through electric wires. In 1895, inventors used a branch of science and engineering called electronics to send signals through space. In electronics, electromagnetic waves are used to carry signals, which travel through space at the speed of light.

Practical applications of electronics led to the invention of radio (in 1906), television (in 1936), computers (in 1950s) and other wonders of modern communication.

5.6.5 Emergence of Mass Media

Mass medium (plural mass media) is any form of communication such as the press, television, radio, and motion pictures, which reaches a large number of people. An important advancement in printing came in 1811, when a German printer named Freidrich Koenig used steam engine to power the printing press. This invention allowed newspapers to print large number of copies at low cost, thereby making mass circulation of newspapers possible. *'The Times'* newspaper of London was the first to use Koenig's press in 1814. At present, radio, television and films are the most powerful mass media in India.

5.6.6 Emergence of Internet and World Wide Web

Advances in computers and telecommunication technologies in the 20th Century led to the emergence of electronic sources of information, digital or electronic libraries, Internet and the World Wide Web. Internet is a global system of interconnected computer networks that serves billions of users worldwide. The origin of Internet dates back to 1960, when the United States Department of Defence initiated a project to build a computer network, ARPANET (Advanced Research Project Agency Network) that could maintain itself in adverse

conditions. By early 1970s, computer power, speed and memory increased and so did the ability to communicate with remote computers over the existing telephone lines on the Internet. At that time dial-up online searches on the Internet were very expensive. Usage of Internet was limited till the advent of World Wide Web or Web in 1990s. The emergence of World Wide Web coupled with the coming up of a large number of Internet Service Providers, offering Internet services to masses, resulted in phenomenal increase in Internet usage in the world. The Internet allows millions of people, all over the world, to communicate and share information.

INTEXT QUESTION 5.6

1. Fill in the blanks with appropriate words:-

   a) The first printed book published by the Chinese was_______________.

   b) Johannes Gutenberg invented____________________.

   c) Advances in computers and communication technology led to the emergence of _______________ sources of information.

   d) Paper was invented in__________by__________.

   e) In ______________________the text and images of documents are photographically reduced.

WHAT YOU HAVE LEARNT

- Sources from where we get information are called information sources. Information sources are of two types, i) Documentary Sources and ii) Non-Documentary Sources.
- All recorded sources are documentary sources. All non-recorded sources are non-documentary sources.
- Based on the Information content and organizational level, a documentary source may be primary, secondary or tertiary source.
- Based on physical format, a documentary source may be either on paper based media or on other media.
- Primary sources contain original information and are in large number and widely scattered. Periodicals, technical reports, dissertations and theses, patents and standards are primary sources of information.

- Secondary sources of information are based on primary sources and present the contents of primary sources in condensed form and list them in helpful way, so that the existence of primary documents is known and access to them is made easy.
- Secondary sources can be grouped under four broad types viz. i) Index/ Abstract type, ii) Survey type, iii) Reference books, and iv) Translations.
- Tertiary sources of information are based on primary and secondary sources of information and act as key to the primary and secondary sources.
- Based on their physical form, documentary sources are either on paper based media or other media. Paper based documentary sources include published as well as unpublished sources.
- Documentary sources on other media include photographic, electronic, magnetic and optical media.
- Non-documentary sources of information are those sources which are not recorded in any form. These sources comprise Humans, Organizations, Mass Media (Like television and Radio); and Internet.

TERMINAL QUESTIONS

1. Describe primary, secondary and tertiary sources of information giving example of each type.
2. What are non-documentary sources of information? Discuss their importance in our day-to-day life.
3. Briefly describe the history of development of information sources.

ANSWERS TO INTEXT QUESTIONS

5.1

1. The facts, data, ideas, and creative works of human intellect and imagination communicated formally or informally in any form, are called information. Information can be transported, stored or shared without any difficulty.
2. The sources from where we get information are called information sources and these comprise documents, humans, institutions as well as mass media like radio and television.

5.2

1. All recorded sources of information irrespective of their content and form are documentary sources. These may be published or unpublished, in print or in electronic form. These may be books, periodicals, magazines, or reference books and others.

2. Documentary Sources can be categorized based on their information content and physical form (or media).

5.3

1. Based on the information content and organizational level documentary sources can be categorized as i) Primary, ii) Secondary, and iii) Tertiary sources of information.

2. Primary sources are those sources which contain original information that has been published, reported or recorded for the first time and has not been interpreted, commented upon, summarized, translated or evaluated by a secondary party. Primary sources include new raw data, new interpretation of previously known facts or idea, any new observation or experiment etc. Primary periodicals, newspapers, technical reports, dissertations, conference papers, patents, standards, trade and product bulletins are primary sources of information.

3. Secondary sources of information are based on primary sources and present the contents of primary sources in condensed form and list them in helpful way, so that the existence of primary documents is known and access to them is made easy. Tertiary sources of information are based on primary and secondary sources of information and act as key to the primary and secondary sources.

5.4

1. Based on their physical form recorded sources can be broadly grouped into i) Paper Based Documentary Sources and ii) Documentary Sources on Other Media. Paper based documentary sources include published as well as unpublished sources. Examples of unpublished sources of information are thesis and dissertations, technical reports, manuscripts, etc.

   Documentary Sources on Other Media can be categorized as follows:-

   a) Sound or Audio recording: Audio cassettes, audio tapes, etc.

   b) Visual images –Still: Slides; Filmstrips; Transparencies; Photographs.

c) Visual Images- Moving: Films; Videotapes; Video disks, etc.

d) Artifacts and Realia: Globes; Relief models, etc.

e) Electronic Media: Magnetic tapes, Discs, Drums, etc.

f) Optical Media: CD-ROM, DVD, etc.

g) Microforms: Microfilms, Microfiche, etc.

5.5

1. Non-documentary sources of information are those sources which are not recorded in any form. Examples of non-documentary sources of information are humans, organizations, mass media other than print media, and Internet.

2. On the basis of contents, there are three categories of documentary sources: (a) Primary (b) Secondary (c) Tertiary and two on the basis of physical forms: (a) Paper based sources (b) Sources on other media.

5.6

1. a) Diamond Sutra; b) Movable type printing press; c) Electronic; d) 105 A.D. by the Chinese; e) Microforms.

GLOSSARY

Access: To retrieve data from computer.

Blu-ray Disc: Blu-ray refers to the blue LASER used to read the disc, which allows information to be stored at a greater density than is possible with the longer wavelength red LASER used in DVDs.

CD-R: Compact disc recordable- data can be recorded once and can be read multiple times.

CD-RW: Compact disc rewritable- data can be recorded and erased multiple times.

DVD-R: Digital versatile disc recordable- data can be recorded once only and can be read multiple times.

DVD-WR: Digital versatile disc rewritable- data can be recorded and erased multiple times.

Index: List of names, subjects, topics etc. arranged alphabetically with an indication to exact location.

LASER: Light Amplification by Simulated Emission of Radiation.

SUGGESTED ACTIVITIES

1. Go to a public library. Search for one each, a primary, secondary and tertiary source of information. Write down the title of each source.

2. Ask the librarian how they arrange their CDs, DVDs, audiotape and videotape collection. Write down details of the same.

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6

TYPES OF INFORMATION SOURCES

6.1 INTRODUCTION

In Lesson 5 you have learnt about different types of information sources, their development and how they are organized based on their information contents and form.

In this lesson you will learn in detail about each one of these sources, their basic information content, utility and examples. You will also learn how to use them effectively to provide services to the users. The Lesson will also deal with advantages and limitations of information sources in print as well as in electronic form.

6.2 OBJECTIVES

After studying this lesson, you will be able to:-

- list various types of information sources;
- explain the difference between periodicals and serials; journals and magazines; and newspapers;
- discuss reports, standards and patents as sources of information;
- explain the role of secondary periodicals and bibliography in accessing primary sources of information;
- distinguish between a book and a manuscript;
- explain the difference between a pamphlet and a book;
- describe a typical book and its parts;

- categorize books on given parameters (content and volume); and
- discuss the importance of tertiary sources of information.

6.3 PRIMARY SOURCES OF INFORMATION

You already know that primary sources are those sources which contain original information. They include new raw data, new interpretation of previously known facts or idea, any new observation or experiment, etc. Primary sources are of varied types, large in number and are widely scattered. Primary sources include periodicals, newspapers, technical reports, dissertations, conference papers, patents, standards, trade and product bulletins.

6.3.1 Periodicals

A periodical is defined as a publication which is published with definite periodicity e.g., weekly, fortnightly, monthly, or quarterly under the same title, and intended to be brought out indefinitely. Each issue is dated and consecutively numbered. All the issues in a volume have continuous pagination. A periodical consists of collection of articles contributed by different authors. Periodicals are also called journals.

A 'serial' can be defined as any publication issued in successive parts which is intended to be continued indefinitely. Common types of serials include research periodicals, trade and business periodicals, newsletters, newspapers, popular magazines, almanacs and yearbooks, annual reviews, indexing and abstracting periodicals. Multivolume books and encyclopaedias are not serials, as they cease publication once the last volume of the series is published.

The information in periodicals is timely, current and up-to-date than information in books. Periodicals are of many types such as scholarly periodicals, trade and business periodicals, popular periodicals and magazines. Scientific journals were the first ones to appear on the scene. In this lesson you will study about following periodicals:-

- Scholarly Periodicals;
- Trade and Business Periodicals;
- Popular Periodicals;
- Magazines; and
- E-Journals

(a) Scholarly Periodicals

Scholarly periodicals are published by learned societies, R&D organizations, universities and some reputed commercial publishers. These are better known as journals which generally publish research findings and are peer reviewed. Because of the rigorous evaluation process, these publications are also referred to as refereed or peer- reviewed journals. Each article in such journals becomes a permanent record of that subject. Some of the basic features of such journals are given below.

- The purpose of a scholarly journal is to report original and significant research in a particular discipline. These journals are primary source of information and also called primary periodicals.
- These periodicals are the best source of information on new or current topics.
- Articles are written by researchers, professionals or experts in the field. The articles are mostly technical in nature and cannot be understood by readers who lack the subject background.
- These journals are meant for scholarly audience and are called scholarly journals.
- Normally, these journals do not carry any advertisements.
- Each issue is consecutively numbered and all issues in a volume have continuous pagination.
- A scholarly journal article often has an abstract (a descriptive summary of the article) before the main text of the article.
- Each article has the address of the author/s.
- Articles always cite their sources in the form of bibliography or footnotes. These bibliographies contain references to other scholarly writings.

'Indian Journal of Experimental Biology' (Fig. 6.1) is an example of a scholarly periodical. Started in 1963, it is published monthly by CSIR-NISCAIR. Besides research articles, it publishes notes and reviews in areas of experimental biology. The latest issue published in January 2013 is Volume 51, issue number 1 with pages 1-86.

Fig. 6.1 Indian Journal of Experimental Biology

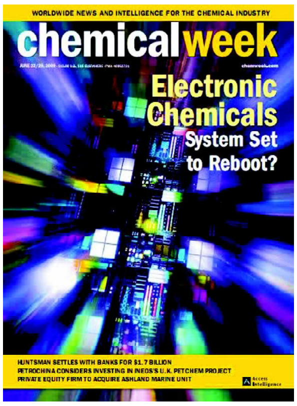
(b) Trade and Business Periodicals

Trade and business periodicals are published by trade organizations and commercial publishers.

- These periodicals cover articles, news, trends and issues for specific business and industry.
- Authors can be professionals in the field or journalists working for the publisher.
- Articles cover industry trends, new products or techniques. The journal also covers organizational news.
- There are lots of advertisements related to specific industry or trade. Index to the advertisers is also included.
- The periodical is mostly published on glossy paper and has colourful illustrations.
- Though the language of the articles tend to be related to terms specific to industry or trade, the articles are written for general educated audience.

Example of trade and business periodical

Indian Textile Journal
Fig. 6.2



Chemical Week
Fig. 6.3

(c) Popular Periodicals

Popular periodicals are devoted to particular subject area and contain articles on that subject written in simple language.

- Popular periodicals are meant for general public who do not have specialized knowledge of a particular subject.
- These are published to inform, educate and entertain the public
- The purpose of popular periodicals in areas of science and technology is to popularize science.
- These are published by R&D organizations, government departments and commercial publishers.
- Articles are mostly short and sometimes do not contain references.

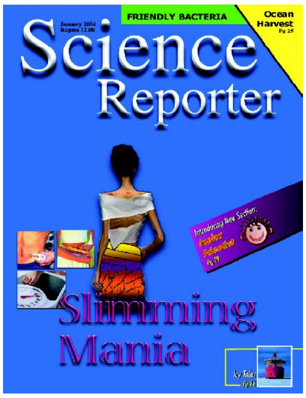
Examples of popular periodicals :

Science Reporter (English, Monthly) (Fig. 6.4)

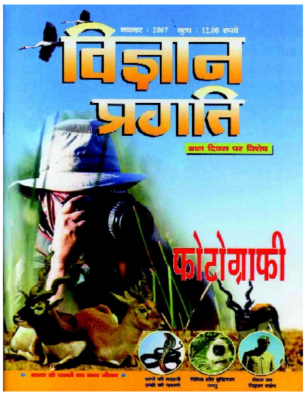
Vigyan Pragati (Hindi, Monthly) (Fig. 6.5)

Science –ki- Dunya (Urdu, Quarterly) (Fig. 6.6)

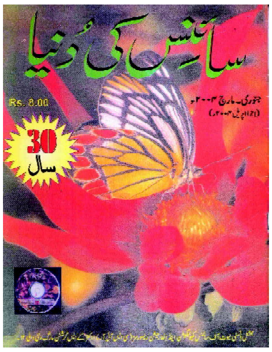
Above three periodicals are popular periodicals (also called Popular Magazines) published by CSIR- NISCAIR. These journals publish popular science articles on contemporary science topics.



Science Reporter
Fig. 6.4



Vigyan Pragati
Fig. 6.5



Science-ki-Dunya
Fig. 6.6

(d) Magazines

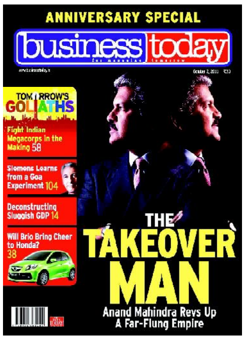
The magazines are published by newspapers and commercial publishers. These magazines entertain, sell products and give practical information and/or promote a view point.

- Content of the magazines include information on popular personalities, news and general interest articles.
- Authors are journalists and freelance writers.
- Glossy covers and lots of colour illustrations and photographs distinguish these magazines from others.
- Advertising is substantial.
- Language is simple and designed to meet a minimal education level.
- Each issue begins with page number one.

Examples of Magazines

India Today
Fig. 6.7

Filmfare
Fig. 6.8



Business Today
Fig. 6.9

(e) E-Journals

E-journal can be defined as any serial produced, published and distributed nationally or internationally via electronic networks. E-journals are also known as paperless journals and online journals. E-journal on CD-ROM is like having printed journal in the library. However, it requires computer and requisite software to read. It has many advantages over print journal. CD-ROM with its storage capacity of over 250,000 pages can provide full text of individual or collected journals of various subjects. Online journals or e-journals on the Internet can be accessed remotely at any time and from anywhere.

Examples of E-journal:

Advances in Natural Science

International Journal of Human Sciences

6.3.2 Newspapers

Newspapers publish news of recent happenings on political, social and economic front of a nation, or region. Newspapers are of different kinds. Some of them are local or regional in their orientation and coverage, others are

national or international. Some newspapers specialize in economic and financial matters and bring out in depth analysis of trade, banking, commerce, etc. Basic features of general newspapers are as follows:-

- Published daily, weekly or bi-weekly.
- Coverage includes news, current events, advertising and topics of human interest.
- Main purpose is to inform, explain, influence and entertain readers.
- Authors are free-lance writers or journalists, but can also be scholars.
- Articles are generally short. Language is simple and designed to meet a minimum education level.
- Articles are generally illustrated with colourful photographs.
- Advertising can be moderate to heavy.

Examples of newspapers:-

Times of India: Published daily and has online edition.

(http://www.timesofindia.indiatimes.com)

Hindustan Times: Published daily and has online edition

(http://www.hindustantimes.com)

6.3.3 Technical Reports

Technical reports are research reports which are produced after conducting research on a well defined research area, mostly in the field of science and technology. Such research is usually sponsored by government organizations, industries or other agencies. The researcher who conducts research for sponsoring bodies, write research results in the form of technical report and submit to the sponsoring agency. Technical reports are primary sources of information.

6.3.4 Conference Papers

A conference is a gathering/meeting sponsored or organized by a learned body where information is exchanged or discussed by experts in a particular subject or field. Every year, thousands of conferences are organized on various subjects, where experts present their papers. After the conference is over, the conference proceedings are published which contain the papers presented in the conference along with discussions, minutes of the meeting and resolutions adopted. Conference proceedings contain a number of research papers and are primary sources of information.

Example : Proceedings of 8th International Convention CALIBER-2011, Goa University, Goa, 2-4 March, 2011

6.3.5 Dissertations and Thesis

Dissertation or a thesis is a document submitted by a researcher in support of candidature for a degree or professional qualification. In some universities dissertation and thesis are seen as the same. In some universities dissertation is submitted at the end of one's Master's degree and thesis is submitted at the end of PhD. Both report original research and are considered primary sources of information.

Example: *Digital Light Photography, a thesis submitted to the Department of Computer Science, University of Delhi for award of doctorate degree.*

6.3.6 Patents

Patent is granted by a government, which gives a person or a company sole rights to make, use or sell a new invention (which may be a product, process or a design) for a certain number of years. Individuals and companies engaged in R&D activities protect their inventions by patenting them with the government. The government grants the patent and publishes the details of granted patents through an official publication. Indian patents are published in **Gazette of India, Part 3, and Section 2.** Patent documents are primary sources of information.

6.3.7 Standards

Standard is a document that provides requirements, specifications, guidelines or characteristics that can be used consistently to ensure that materials, products, processes and services are fit for the required purpose. A standard can be defined as 'a set of rules for ensuring quality of a product, a process or a service.'

Standards are basically of two types:

i) Fundamental standards, and

ii) Technical standards

Fundamental standards are related to measurement of length, mass, time, temperature, various forms of energy, force, or other forms of quantifiable fundamental entities that are basic to all scientific and technical practices.

Technical standards are related to product, process, material or service. Standards are primary sources of information.

Standards ensure that products or services are safe, reliable and are of good quality. Standards help businesses to develop consistent product so that it can be globally accepted and adopted. This encourages international trade. Standards also make it easier to understand and compare competing products.

Example: *ISO 2709: Standard for Bibliographic Record Formats*

6.3.8 Trade and product bulletins

Trade and product bulletins are information products brought out by the publishers, manufacturers and distributors of various types of materials, products or services. Trade and product bulletins cover every kind of material, product or service ranging from books, drugs, chemicals, household goods to complex machinery and equipment used in research and industry. The basic purpose of this type of trade literature is to describe various attributes of the product, material or service and promote its sale to the potential customers. Trade and product bulletin are primary sources of information and information reported about specific commercial product is not likely to be published in any other form of literature.

Example: Electronics For You, June 2013.

INTEXT QUESTIONS 6.1

1. Define periodical. Enumerate different types of periodicals.
2. Describe standards and state their importance in promoting trade.
3. What are trade and product bulletins and what purpose do they serve?
4. Discuss the basic features of a general newspaper.
5. What is a patent? Where are Indian patents published?

6.4 SECONDARY SOURCES

Information published in primary sources on a particular subject is widely scattered and is available in large number of sources like primary periodicals, technical reports, dissertations, conference papers, patents, standards and so on. In addition, the research results are published in different languages. This makes it very difficult for a researcher to keep track of what is latest in his/her field of interest. To solve this problem there are other set of publications called secondary sources. Secondary periodicals, bibliographies, books, reviews, treatises, state-of-the- art reports, reference sources, etc. come under secondary

sources. In this lesson you will study about secondary periodicals, bibliographies and books. Reference sources will be covered in Lesson 7.

6.4.1 Secondary Periodicals

Secondary periodicals regularly scan the literature published in primary sources, select the relevant items, arrange them in helpful sequence and bring them to the notice of researchers at weekly, fortnightly or monthly intervals. These publications contain bibliographical references of each item with or without abstracts. A secondary periodical with abstract is an *abstracting periodical* and without abstract is an *indexing periodical*. These publications bring together recently published literature in specific subject discipline scattered over wide range of primary sources.

(a) Indexing Periodicals

In indexing periodicals the relevant items with full bibliographical details are selected from primary sources and are arranged either under broad subject headings or under class numbers. This arrangement brings all the items on the same subject together. Bibliographical details help the reader to identify and locate the original document. For example, if the document is a journal article, bibliographical details will provide the name(s) of the author(s), title of the article, title of the journal, its volume number, issue number, year of publication and the page numbers of the article. The indexing periodical also provides author and subject indexes of the items covered.

Example of an indexing periodical :

The Reader's Guide to Periodical Literature is an indexing periodical published every month by H W Wilson Company. It covers recently published articles in 400 scholarly journals and popular magazines in a wide range of subjects.

(b) Abstracting Periodicals

In an abstracting periodical the contents of the selected items are condensed or summarized (called abstracts) along with bibliographical details of the document which help the reader to identify and locate the original document. The abstract of the article helps the user to decide whether to read the full document or not. At times a well prepared abstract serves as substitute for the original document. Abstracting periodicals also provide author and subject indexes.

Examples of Abstracting Periodicals :

Indian Science Abstracts (ISA) (Fig. 6.10) is a fortnightly abstracting periodical reporting the scientific research work done in India and published in Indian journals. This is published by CSIR- NISCAIR. The periodical covers research and review articles from Indian scientific and technical periodicals, Indian proceedings of conferences, Indian standards and theses.

Indian Science Abstracts on CD-ROM is a cumulative database of nearly 200,000 abstracts covering the period from Jan. 1990 to Dec. 1999. Database is searchable by keywords, author, corporate author, ISA issue number and year of publication.

Indian Science Absracts Online

From 2000 onward ISA is searchable online at NISCAIR website. (http://www.isa.niscair.res.in)

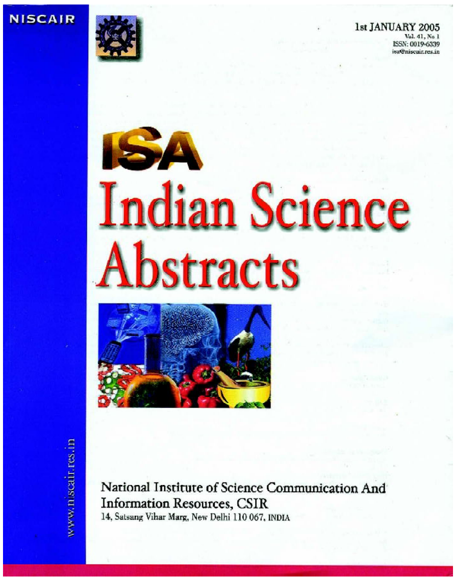


Fig. 6.10 Indian Science Abstracts

Indexing and abstracting periodicals are available in every subject field. At present most of the national as well as international indexing and abstracting periodicals are available in three versions: viz. in Print, CD-ROM, and Online on the Web.

6.4.2 Bibliographies

A bibliography is a systematic list of documents that share a common factor that may be a subject, a language, a period, an author or some other criteria. The list may be comprehensive or selective. The list is arranged by some order. Such bibliography, known as enumerative or systematic bibliography, attempts to record or list. Each entry provides bibliographical details of the document.

An entry for book contains following information:-

Name (s) of author(s)

Title of the book

Publisher

Date of publication

An entry for journal contains:-

Name(s) of author(s)

Article title

Journal title

Volume number, Issue number, Year of publication

Page numbers

(a) **National Bibliography:** A national bibliography lists the publications produced in a country.

Example of national bibliography

Indian National Bibliography, compiled by Central Reference Library, Kolkata.

(b) **Trade Bibliography***:* Trade bibliographies are brought out by publishers, book sellers, distributors or printers. These bibliographies list books which are meant for sale. Trade bibliographies are used by the libraries to select books for the library. Example of trade bibliography:-

Indian Books in Print: A select Bibliography of English Books Published in India published by Indian Bureau of Bibliographies.

(c) **Subject Bibliography:** A subject bibliography lists the documents on a given subject. To carry out literature search and compile a subject bibliography is one of the important services of a library. Sometimes these bibliographies are compiled on regular basis in anticipation of the users' needs. These bibliographies are also compiled on special occasions such as during seminars and workshops to provide the participants with the latest literature on the subject. University and special libraries offer this service more frequently than the public library.

Example: Enser AGS: *A Subject bibliography of the First World War books* in English; n1914-1987, Brookfield, NT Gower, 1990

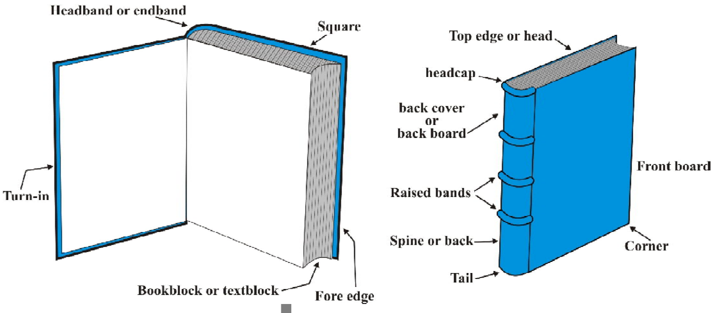
INTEXT QUESTIONS 6.2

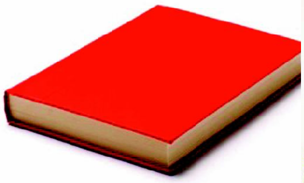
1. Distinguish between indexing and abstracting periodicals.
2. Define a bibliography and describe its types.

6.4.3 Books

A book can be broadly defined as a written or published document of at least 49 text pages that communicates thoughts, ideas or information. Pages of the book are glued or sewn together along one side, called the spine or back, so that it can be opened at any point. Two covers of the book are joined by hinges to the spine. Books are either hardbound or softbound, depending on the cover. Most of the hardbound books have a cover made of cloth, plastic or leather over cardboard. A paper cover jacket is often added to protect the cover of a hardbound book (Fig. 6.12). Most of the softbound books, called paperbacks, have paper covers (Fig. 6.13) .

Part of a Book





Parts of a Book **Fig. 6.11** | **Hardbound Book** **Fig. 6.12** | **Softbound Book** **Fig. 6.13**

A book can be distinguished from a pamphlet and a manuscript as follows:-

Pamphlet

A pamphlet is an unbound printed publication with no cover or with paper cover. A pamphlet has a minimum of 5 pages and a maximum of 48 pages, exclusive of the cover pages.

Manuscript

Manuscript is a term used for any document written or typed by a machine such as typewriter or computer. The word is often used to distinguish an author's original version of a work (which may be a book, an article or any other work) from the printed copy.

In addition, manuscript refers to any handwritten documents from ancient times until the introduction of printing in 1400s. Such manuscripts are called '*historical manuscripts.'* Most historical manuscripts can be traced to certain times or areas by the material on which they were written. You have studied about different types of material in Lesson 5 of this course.

(a) Book Types

Books are important sources of information and libraries acquire them based on the needs of the users. Based on the contents, a book may be a simple book or a composite book; single-volume book or multi-volume book; fiction book or nonfiction book; a text book or a treatise. Based on the physical format, a book may be in print or non-print medium. Books in non-print medium include audio books, video books, multimedia books and e-books.

Simple Vs Composite Book

If the treatment of subject is continuous and written by one or more than one authors, the book is a simple book. When each chapter of the book is written by different authors and the subject may or may not be dealt continuously, the book is called a composite book.

Example of Simple book: *The Digital Scholar* by M. Weller

Example of Composite book: *Impact of Open Courseware for Higher Education in Developing Countries- a collection of 10 articles.* Edited by S. Evans and M.L. Smith

Single-Volume Vs Multi-Volume Book

A book in one volume is known as single-volume book. A book in more than one volume is called multi-volume book. Besides this, there is continuous pagination in different volumes of the set.

Example of Single-volume book: *Scholarly Communication* by S. l. Gillenson

Example of Multi-volume book: *The Handbook of Artificial Intelligence, Volumes 1-4* by A. Barr & E. A. Feigenbaum

Reference Book

A reference book provides answers to brief facts, statistical information, background information, or directs you to additional information source. It is a book meant only to be consulted or referred to for some specific piece of information and are not meant for continuous reading. Reference books include

dictionaries, encyclopaedias, handbooks, yearbooks, almanacs, directories, biographical and geographical sources.

Examples: The Oxford Dictionary of Quotations, World Book Encyclopaedia, The Statesman's Year-Book, The World Book Atlas

Fiction Vs Nonfiction Book

Fiction books are story books, novels and other prose writings that tell about imaginary people and happenings. Nonfiction books are about real things, people, events and places. Subject books, reference book etc. are nonfiction books. In a library, fiction books are arranged alphabetically by author's last name, so that books by the same authors are kept together. Nonfiction books are arranged by their class number, (each subject is given a class number) so that all the books on the same subject are kept together.

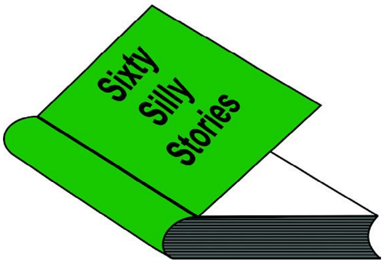


Fig. 6.14 : Fiction book

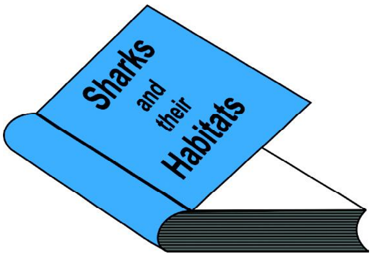


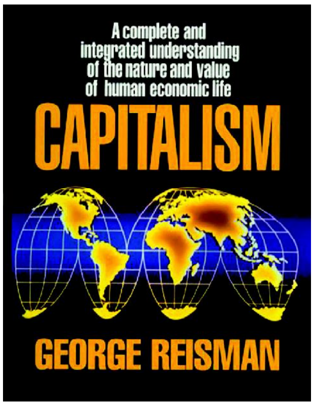
Fig. 6.15 : Non-Fiction book

Textbook Vs Treatises

A textbook is a book for regular study by a student and is meant to be used as a standard book in the study of a particular subject. Textbooks are designed to inform in a systematic manner and generally begin by introducing concepts and continue on to give more details of the subject. Most books used in schools for different subjects (such as arithmetic, geography, history, science etc.) and for different classes are textbooks. Textbooks are graded and instructional in nature and are designed keeping in view the comprehension level of students in each grade. Students use textbooks to gain knowledge about various subjects and teachers use textbooks to teach and prepare various class assignments.

Treatises

A treatise is a formal in depth treatment of a subject .Treatises are meant for scholars for advanced study. Example of treatise, *Capitalism: A treatise on Economics.* (Fig. 6.16)



(Courtesy: Amazon .com)

Fig. 6.16

(b) Inside a Book

Inside the front cover of a typical book is a collection of pages called preliminary material which includes *Title Page, Copyright page, Acknowledgement page, Dedication page, Preface* and *Table of Contents*. This is followed by the body of the book i.e. the *Text*. At the end of the Text are pages containing *Glossary, Bibliography and Index.*

Title Page: The page at the beginning of the book usually contains the title of the book, name(s) of the author(s), and publisher.

Copyright Page: Contains the name of the publisher and date of publication.

Acknowledgement Page: Expresses author's gratitude to persons who helped him/her to write the book.

Dedication Page: Tells to whom the author dedicates the book.

Preface: Also called *Foreword* or *Introduction,* where the author states the aim of writing the book and describes its important features.

Table of Contents: The list of contents, arranged by chapters with their page numbers.

Text: The body of the book which is usually divided into units or chapters.

Glossary: List of important words used in the book together with their meaning

Bibliography: List of books, articles, etc. used by the author as sources of information.

Index: Alphabetical list of names of persons, places and topics discussed in the book with their corresponding page numbers.

INTEXT QUESTIONS 6.3

1. Define a book. Differentiate between a book, manuscript and a pamphlet.
2. State the difference between a textbook and a treatise.

6.5 TERTIARY SOURCES OF INFORMATION

Tertiary sources are based on primary and secondary sources and serve as key to the primary and secondary sources. These sources consist of information which is a distillation and collection of primary and secondary sources. Tertiary sources are third in the order of appearance. First in the order of appearance are primary sources, next are secondary sources and then come the tertiary sources. Tertiary sources help to locate primary and secondary sources. Sources like bibliography of bibliographies; guides to the literature; directories listing primary and secondary periodicals etc, are placed under tertiary sources.

Some examples of tertiary sources are listed below:-

Bibliographic Index: A Cumulative Bibliography of Bibliographies. N.Y. H. W. Wilson Company: 1937 to date

Walford's Guide to Reference Material. 8th ed. London: Library Association. 3 Volumes.

6.6 ELECTRONIC SOURCES

Electronic publications are those publications which require use of a computer to access the information they contain. Electronic publication can be off-line or on-line. Off-line electronic publication is the publication which is stored in machine readable form on an electronic storage medium like CD-ROM, DVD, Diskette or magnetic tape etc and can be accessed using computer and requisite software. Online electronic publication is an electronic document which is accessible online on the Internet, for example an electronic journal, a World Wide Web page, or online databases.

Most of the sources we have discussed above are available in both, print and electronic form. Some of the sources which were in print form earlier are now available in electronic form only. For example, *Library and Information Science Abstracts* and *Guide to Reference Books* are published and distributed electronically only.

The advantages and limitations of electronic sources over print sources are as given below:-

6.6.1 Advantages of Electronic Sources over Print Sources

- Electronic sources are more frequently updated than their print counterpart.
- They provide more search options.
- Provide access to wider range of information.
- Provide faster and easy access to information. Particularly in the case of indexing and abstracting periodicals, where back volumes are consolidated into single searchable database, search is easy and extremely fast.
- Online resources provide linkages from citations to full text e-journals.
- Full-text data can be delivered instantly on the remote computer.
- Electronic resources can be delivered in multimedia format where text, video and sound can be added.
- A print source can be used by one person at a time, whereas an online electronic source can be accessed simultaneously by many users.
- An online electronic source can be accessed at any time and from any place where network exists.
- Back volumes of print periodicals need to be bound and stored. This calls for lots of expenses and plenty of storage space. Whereas, e-journals are accessible online, they need not be bound or stored. Even electronic resources on CD-ROM occupy very little space.
- Missing issues, missing pages and other damages caused by mishandling of print sources do not occur in electronic sources.

6.6.2 Limitations of Electronic sources

- Use of electronic sources require expensive infrastructure which must be acquired, maintained and upgraded. This includes computer hardware and software, Internet connection and subscription to electronic resources.
- Electronic sources, despite being user friendly, require certain degree of computer knowledge to get maximum benefit from them. This means libraries have to incur expenses to train their staff as well as the users to use the resources.
- Most of the publishers of e-publications sell their products under license agreement. The license agreement imposes a number of restrictions on the user in the use of e-resources.
- Reading from the computer screen causes discomfort to the users. Most of the users prefer to take print out of the article for reading and do most of the reading from print publications.

Though advantages of electronic sources are far more than their limitations, but they are not likely to replace print sources in the foreseeable future. People still prefer to read newspapers, books and many other sources in print form.

Thus, electronic sources will not substitute but supplement print sources.

INTEXT QUESTIONS 6.4

1. What are electronic sources of information?
2. Mention two advantages and two disadvantages of using electronic sources

WHAT YOU HAVE LEARNT

- Primary sources of information contain original information and are in large number and widely scattered. Primary sources comprise primary periodicals, newspapers, technical reports, conference proceedings, patents and standards.
- A periodical or journal is a serial publication which is published with definite periodicity under the same title and intended to publish indefinitely. The information in periodicals is more timely, current and up-to-date, than information in books. Periodicals are of many types such as scholarly periodicals, trade and business periodicals, popular periodicals and magazines.
- E-journal is a serial produced, published and distributed nationally or internationally via electronic networks. E-journals are also known as paperless journals and online journals.
- Newspapers publish news of recent happenings on political, social and economic front of a nation, or region. Newspapers are of different kinds. Some of them are local or regional in their orientation and coverage, others are national or international.
- Conference proceedings contain number of research papers and are primary sources of information.
- Dissertation or a thesis is a document submitted by a researcher in support of candidature for a degree or professional qualification.
- Technical reports are research reports which are produced after conducting research on a well defined research area, mostly in the field of science and technology.

- Standard is a document that provides set of rules for ensuring quality of a product, process or a service.
- Patent is a government grant which gives a person or a company sole rights to make, use or sell a new invention (which may be a product, process or a design) for a certain number of years. The government grants the patent and publishes the details of granted patents through an official publication.
- Secondary sources are based on primary sources and they present the contents of primary sources in condensed form and list them in helpful way, so that the existence of primary documents is known and access to them is made easy.
- A secondary periodical with abstract is an abstracting periodical and without abstract is an indexing periodical. These publications bring together recently published literature in specific subject discipline scattered over wide range of primary sources.
- A bibliography is a list of documents that share a common factor that may be subject, a language, a period, an author or some other criteria. The list may be comprehensive or selective. A national bibliography lists the publications produced in a country. Trade bibliographies are brought out by publishers, book sellers, distributors and printers. A subject bibliography lists the documents on a given subject.
- A book is a written or published document of at least 49 text pages that communicates thoughts, ideas or information. A pamphlet is an unbound printed publication with no cover or with paper cover. A pamphlet has minimum of 5 pages and maximum of 48 pages.
- Tertiary sources are based on primary and secondary sources and serve as key to the primary and secondary sources. Tertiary sources help to locate primary and secondary sources. Sources like bibliography of bibliographies; guides to the literature; directories listing primary and secondary periodicals, etc. are placed under tertiary sources.

TERMINAL QUESTIONS

1. Briefly describe each category of primary sources of information?
2. Distinguish between indexing and abstracting periodicals. Discuss their significance as secondary sources of information.
3. Describe electronic sources of information and list their advantages over printed sources.

ANSWERS TO INTEXT QUESTIONS

6.1

1. A periodical is a serial and can be defined as a publication which is published with definite periodicity (weekly, fortnightly, monthly, or quarterly etc.) under the same title, and intended to be published indefinitely. Each issue is dated and consecutively numbered. All the issues in a volume have continuous pagination. There are scholarly periodicals, trade and business periodicals, popular periodicals and E-journals.

2. Standard is a document that provides requirements, specifications, guidelines or characteristics that can be used consistently to ensure that materials, products, processes and services are fit for this purpose. A standard can be defined as 'a set of rules for ensuring quality of a product, a process or a service. Standards ensure that products or services are safe, reliable, and are of good quality. Standards help businesses to develop consistent product so that it can be globally accepted and adopted. This encourages international trade.

3. Trade and product bulletins are information products published by manufacturers and distributors of various types of materials, products or services, ranging from books, drugs, chemicals, household goods to complex machinery and equipment used in research and industry. The basic purpose of this type of trade literature is to describe various attributes of the product, material or service and promote its sale to the potential customers.

4. Newspapers publish news of recent happenings on political, social and economic front of a nation, or region. Basic features of general newspapers are as follows:-

   - Published daily, weekly or biweekly.
   - Coverage includes news, current events, advertising and topics of human interest.
   - Main purpose is to inform, explain, influence and entertain the readers.
   - Authors are free-lance writers or journalists, but can also be scholars.
   - Articles are generally short. Language is simple and designed to meet a minimum education level.
   - Articles are generally illustrated with colourful photographs.
   - Advertising can be moderate to heavy.

5. Patent is granted by government which gives a person or company sole rights to make, use or sell a new invention (which may be a product, process or a design) for a certain number of years. Individuals and companies engaged in R&D activities protect their inventions by patenting them with the government. The government grants the patent and publishes the details of granted patents through an official publication. Indian patents are published in Gazette of India, Part 3, and Section 2.

6.2

1. Indexing and abstracting periodicals scan the literature published in latest primary sources, select the relevant items, arrange them in helpful sequence and bring them to the notice of researchers at weekly, fortnightly or monthly basis. These publications contain bibliographical references of each item with or without abstracts. A periodical with abstract is an abstracting periodical and without abstract is an indexing periodical. These publications bring together recently published literature in specific subject discipline scattered over wide range of primary sources.

2. A bibliography is a list of documents that share a common factor that may be subject, a language, a period, an author or some other criteria. The list may be comprehensive or selective and arranged in some order. Bibliographies are of three types, National Bibliography, Trade Bibliography and Subject Bibliography. A national bibliography lists the publications produced in a country. Trade bibliographies are brought out by publishers, booksellers and distributors. These bibliographies list books which are meant for sale. A subject bibliography lists books on a given subject.

6.3

1. A book can be broadly defined as a written or published document of at least 49 text pages that communicates thoughts, ideas or information. Pages of the book are glued or sewn together along one side, called the spine or back, so that it can be opened at any point. An unbound printed publication with less than 48 pages is called a pamphlet. A typewritten or hand written version of a book, an article or other work, especially author's own copy, prepared and submitted for publication is called a manuscript.

2. A textbook is a book for regular study by a student and is meant to be used as a standard book in the study of a particular subject. Textbooks are graded and instructional in nature and are designed keeping in view the comprehension level of students in each grade. A treatise is formal work on a subject, dealing with in depth treatment of a subject Treatises are meant for scholars for advanced study of a subject.

6.4

1. Electronic sources of information are those sources which require use of a computer to access the information they contain. An electronic source can be off-line or on-line. In off-line electronic source the information is stored in machine readable form on an electronic storage medium like CD-ROM, DVD, Diskette or magnetic tape etc and can be accessed using computer and requisite software. Online electronic source is an electronic document which is accessible online on the Internet, for example an electronic journal, a World Wide Web page, or online databases.

2. Electronic sources are frequently updated and require very little storage space. Expensive infrastructure required to access these resources and stringent license agreement restrict their use.

GLOSSARY

Multimedia: Use of different media to convey information. Multimedia includes text, together with pictures, audio and video either on CDROM or on web pages.

SUGGESTED ACTIVITIES

1. Go to a library. Select a fiction and a non-fiction book. Note down the title, subtitle, author(s), and publisher of each book. See through preliminary pages, content page, and body of each book. Write down the differences that you observe in presentation of information in both the books.

2. Go to a library. Select a scholarly periodical, popular periodical and a magazine. Write down the title, year of publication, and publication frequency of each. Find out the name of the publisher and list the contents of the periodicals from the content page. Write down the differences you observe in each category.

Notes

7

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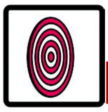
REFERENCE SOURCES

7.1 INTRODUCTION

In Lessons 5 and 6 you have studied about information sources and their categories based on information content and form. You have learnt that information sources can be broadly categorized as primary, secondary and tertiary sources based on their contents. Secondary sources can be further grouped as index type, survey type, translations, and reference sources. You have studied in detail the first three groups of secondary sources. In this lesson, you will study different types and importance of reference sources.



7.2 OBJECTIVES

After studying this Lesson, you will be able to:-

- define Reference Sources;
- explain the need for Reference Sources;
- differentiate Reference Sources from other Information Sources;
- enumerate various categories of Reference Sources;
- define Dictionary, Thesaurus, Encyclopaedia, Yearbook, Almanac, Directory and Biographical information sources;
- describe Geographical Information Sources (Maps, Charts, Globes, Atlases, and Guidebooks);
- identify the electronic version of various reference sources available online

Notes

7.3 REFERENCE SOURCES/BOOKS

A reference source provides answers to brief facts, statistical information, background information, or directs you to additional information source. The reference sources are standard works that are used to locate specific type of information. Although the term 'reference book' is frequently used, reference sources may be books, serials, on-line databases, or internet. Reference books are referred to or consulted only, and are not meant for continuous reading. For example, you normally use a dictionary to find the meaning of a word, you do not read it page-by-page as you do with a text book or a story book. Reference sources include dictionaries, encyclopaedias, handbooks, yearbooks, almanacs, directories, biographical and geographical sources. You must be familiar with dictionaries and encyclopaedias, as you might have used either one or both of them for your class assignments or at home.

Librarians usually provide reference services on the basis of reference books in their collection. These are mainly used for providing 'Ready Reference' service to the library users. In most libraries, these books are not issued and are located in a separate reference collection. This practice makes reference sources readily available and easily accessible. Most of the reference books are specifically designed to provide required information quickly and in the most convenient form. Various reference sources covered in this lesson are:-

- Dictionaries
- Encyclopaedias
- Handbooks
- Yearbooks
- Almanacs
- Biographical sources, and
- Geographical Sources

Let's start with a dictionary.

7.4 DICTIONARY

The word dictionary comes from the Medieval Latin word *dictionarium (*meaning collection of words or phrases), which in turn came from the Latin term *dictio* meaning "word". The ancient Greeks and Romans were the first to produce dictionaries. But most Greek and Latin dictionaries were either lists of rare and difficult words or specialized list of words.

A modern dictionary is a book containing words of a language arranged

alphabetically with their meanings. Most dictionaries tell us much more than meaning of the words. Many list pronunciations, grammatical labels, illustrative quotations, synonyms, antonyms, usage notes and other information. Some dictionaries include etymology i.e., origin of words and history of words also. Example of dictionary is The Chambers Dictionary.

The other reference book which deals with words is a Thesaurus. In this reference book words that have the same or similar meaning (synonyms and sometimes antonyms) are grouped together. In contrast to a dictionary, which helps to find meaning and pronunciation of the words, a thesaurus helps to find the most appropriate word to express an idea and also other related words.

Example of Thesaurus: *The Merriam-Webster's Thesaurus*

7.4.1 Types of Dictionaries

Dictionaries give meanings of many kinds of words. Dictionaries include ordinary words of everyday life, technical words, words used in scholarly writing, idioms, words and phrases from other languages, new words emerging from scientific and technical discoveries, important proper names and geographical names etc. In fact no dictionary can record all the words of a language, as no language is static and new words are coined everyday in speech or writing or due to the ongoing research in various disciplines.

Based on the number of words, scope and coverage of other items of information, the dictionaries can be categorized into following groups:-

- General Language Dictionaries;
- Subject Dictionaries;
- Special Purpose Dictionaries; and
- Bilingual and Multilingual Dictionaries

(a) General Language Dictionaries

General language dictionaries cover all the words of a language and give meanings, definition, and explanation of the words in the same language. The language may be English, French, Hindi, German or Russian. For example, an English language dictionary will include English words and give their meanings in English language. These dictionaries are also called monolingual dictionaries.

General Language Dictionary can be further sub - divided according to size and target user group.

According to size, general language dictionary may be

i) Comprehensive/Unabridged,

ii) Abridged/college/desk, or

iii) Pocket dictionary.

i) Comprehensive/Unabridged dictionary covers all the words of a language, past as well as words currently in use. For example *Merriam-Webster's Third New International Dictionary of the English Language* is in 3 volumes and has over 450,000 entries. **The Online version** of this dictionary is *Merriam–Webster Unabridged–Online Dictionary.*

ii) Abridged/College/Desk dictionary covers most common and currently used words, and has less number of words than an unabridged dictionary. For example *Merriam-Webster's Collegiate Dictionary,* 11th Edition, published in 2003, has 165,000 entries.

iii) A Pocket dictionary is small enough to be carried in a pocket for quick reference. The dictionary covers 40,000 to 60,000 words that are currently in use. For example, *Merriam-Webster's Pocket Dictionary* has 40,000 entries.

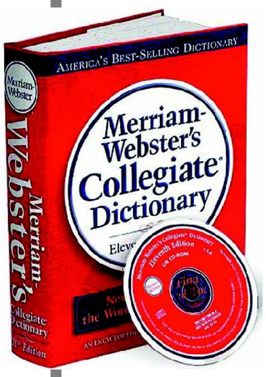


Fig. 7.1

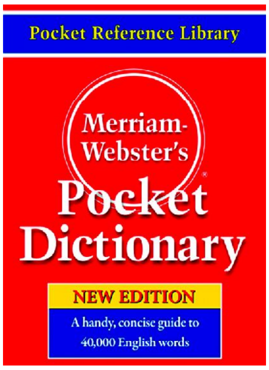


Fig. 7.2

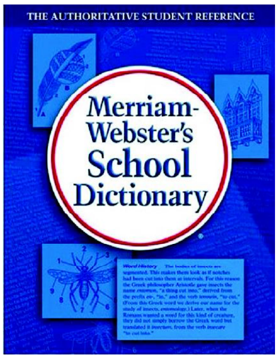


Fig. 7.3

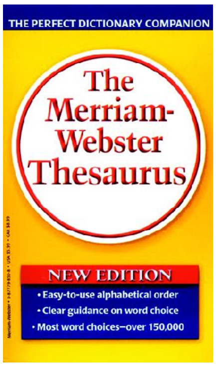


Fig. 7.4

Figures of different types of dictionaries.

Depending on the target user's age, and language proficiency, a general language dictionary may cater to

i) School children (ranging from kindergarten to high school),

ii) College students, and

iii) Adults.

Children's dictionaries cover words related to the course curriculum. The meanings and definitions are written in simple language which children can comprehend. Children dictionaries also include more illustrations to make children understand the concept.

Merriam-Webster's School Dictionary includes more than 100,000 words, nearly 1,000 illustrations and about 1500 usage examples.

Most of the reputed publishers of unabridged standard general language dictionaries bring out abridged, desk, college, and children edition of their dictionaries. Publishers of these dictionaries continuously update their editions. With each new printing they add or delete a given number of words. This is particularly true for desk dictionaries which are used by young people and must reflect current usage and new words introduced into the language via radio, television, music, technology etc.

(b) Subject Dictionaries

Subject dictionaries concentrate on the definition of the terms in a given subject. Subject dictionaries are becoming increasingly common, due to increase in study and research in different subject areas ranging from arts, humanities, social sciences to science and technology. For example *McGraw-Hill Dictionary of Scientific and Technical Terms,* 6th Edition, is a comprehensive dictionary of scientific and technical terms covering over 115,000 terms and 125,000 definitions in 104 areas of science and technology.

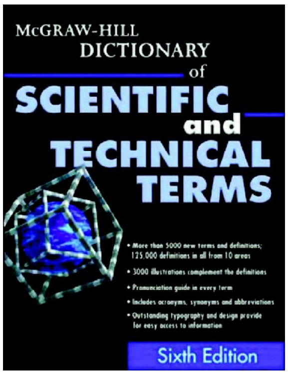


Fig. 7.5

Subjects Dictionary

(c) Special Dictionaries

The special dictionaries deal with special types or special aspect of the words. Special type or class of words include obsolete words, acronyms, abbreviations etc. Special aspect of the word includes linguistic aspect of the words (such as pronunciation, synonym and antonyms, etc.), or literary aspect of the words (such as quotations, idioms, proverbs, etc.). Though most of these aspects of the words are covered by general language dictionaries as well, special dictionaries cover these aspects much more comprehensively. Special dictionaries supplement general language dictionaries. Examples of special dictionaries are as follows:-

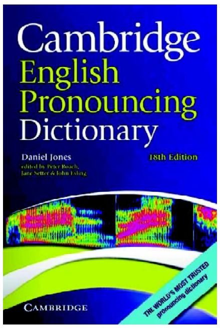


Fig. 7.6

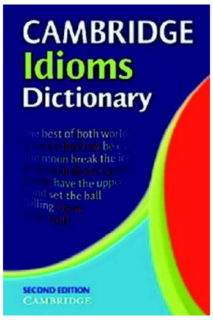


Fig. 7.7

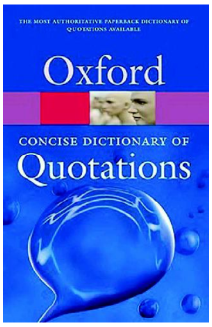


Fig. 7.8

Cambridge English Pronouncing Dictionary. The dictionary provides spoken British and American pronunciation for every word. Cambridge dictionary is also available for mobile phones.

Cambridge Idioms Dictionary. The dictionary explains the meaning and use of over 7000 idioms in British, American and Australian English.

The Oxford Dictionary of Quotations. The dictionary lists short quotations that are frequently used in English language and culture.

(d) Bilingual and Multilingual Dictionaries

The bilingual dictionaries give meaning of a word from one language to another language. For example, an English-Hindi dictionary, will list words in English and give equivalent words in Hindi. This type of dictionary is called a bilingual dictionary. A multilingual dictionary gives the meaning of a word in more than two languages. These dictionaries are also called translating dictionaries. These dictionaries normally do not define the words, but translate the words from one language to another language. Many of them are limited in scope to certain subject fields such as astronomy, biology, electronics, etc.

Oxford University Press brings out a number of bilingual and multilingual dictionaries.

Fig. 7.9 :
Bilingual Dictionary

Fig. 7.10
Multilingual Dictionaries

Examples of bilingual and multilingual dictionaries:-

Concise Oxford Spanish Dictionary, 4th edition published in 2009, is a comprehensive English-Spanish and Spanish-English dictionary with 175,000 words and phrases and over 200,000 translations. The dictionary has an online edition as well. (http://www.oup.com/)

Multilingual Biomedical Technical Dictionary: (in English, Spanish, Portuguese, French, German, Swedish and Dutch). The dictionary covers over 40,000 entries with about 40,000 synonyms and details each, in seven languages.

Shabdkosh- English-Hindi Dictionary (http://www.shabdkosh.com) the website provides English to Hindi as well as Hindi to English translation.

Many sites offer free translation facility on the Web. Listed below are some of these sites;-

http://www.freetranslation.com/

http://www.babylon.com/

INTEXT QUESTIONS 7.1

1. What are reference sources?
2. What is a general language dictionary? Describe its categories with examples.
3. Enumerate criteria that differentiate a special dictionary from a general dictionary.

7.5 ENCYCLOPAEDIA

It is a book or set of books giving information on all branches of knowledge or on certain wide fields with articles arranged alphabetically. An encyclopaedia contains information about people, places, events, and things. It may deal with all areas of knowledge or it may be limited to just one subject area. A general encyclopaedia includes information on topics in every field of knowledge. Specialized encyclopedias provide more detailed and technical information on specific area of knowledge such as arts, science and technology or social sciences. Specialized encyclopaedia is also known as subject encyclopaedia.

A well planned general encyclopaedia presents facts about humanity, human beliefs, ideas, and achievements; about the world people live in; and about the universe to which they belong. It presents these facts using language that is easy to understand.

An encyclopaedia is concerned with who, what, where, when, how, and why of things. General encycloaedia enriches general knowledge, provides information on known topics, and provides bibliography at the end of articles which helps to find more information on that topic. For example, an article on 'computer' tells what a computer is, who developed it, as well as when and where. It also describes how a computer works and why it is important for people.

Different articles in an encyclopaedia vary in length ranging from a paragraph to over hundred pages depending upon the topic covered; target audience and

type of encyclopaedia (whether single volume or multivolume encyclopaedia). Articles in standard encyclopaedia are written by subject specialists and then edited by the encyclopaedia staff editors to conform to policies of the publishing house in terms of content, style and punctuation. Editorial staff ensures that each article in the encyclopaedia has, more or less, a similar writing style, and uses headings and sub-headings in a uniform standard pattern. Pictures and diagrams are included wherever necessary to clarify the concepts and enhance learning process. Most encyclopaedias are arranged alphabetically from A to Z. Some are topically arranged, such as one volume may be devoted to 'Animals', another to 'Plants', 'Earth' and 'Universe', or some other subjects.

7.5.1 Types of Encyclopaedias

Encyclopaedias can be broadly divided into two types:-

- General Encyclopaedia; and
- Subject Encyclopaedia

i) **General Encyclopaedia:** Covers all fields of knowledge. For example *Encyclopaedia Britannica.*

ii) **Subject Encyclopaedia**: Covers either single subject such as *Encyclopaedia of Physics* or group of subjects such as *Encyclopaedia of Science and Technology.*

(a) General encyclopaedia can be further categorized on the basis of

i) Size (single volume-set or multi-volume-set), and

ii) Target users (for adults, students or children).

Most of the publishers of general encyclopaedias bring out different sets of encyclopaedias for adults, students and children of various age groups. Articles in Children's encyclopaedias are written in simple language and with illustrations to make the topic clear and understandable.

Examples of encyclopaedias :-

Encyclopedia Britannica is a general English language encyclopaedia, published by Encyclopedia Britannica Inc. The set contains 73,645 articles. The articles are aimed at educated adults and are written by about 100 full time editors and more than 4000 expert contributors. It is regarded as most authoritative and scholarly encyclopaedia. **The 2010 Edition** of the encyclopaedia in print consists of the following 32 volumes:-

- 12- Volume Micropedia with short articles (generally fewer than 750 words) for ready reference;

- 17-Volume Macropedia with long articles (ranging from two to 300 pages) for in-depth study of a topic.
- One-Volume Propedia giving outline of knowledge covered; and a
- 2-Volume Index.

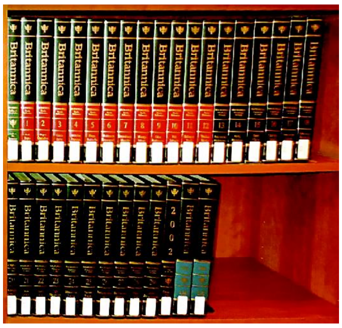


Fig. 7.11

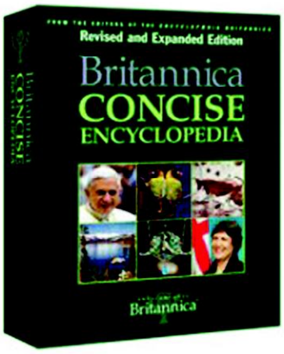


Fig. 7.12

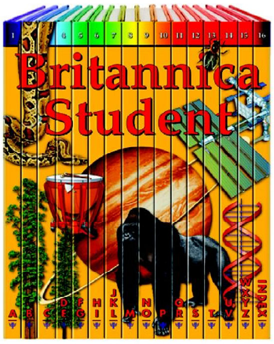


Fig. 7.13

Encyclopedia Britannica

Single Volume Britannica Concise Encyclopedia has 28,000 short articles condensing the larger 32-Volume Britannica.

Britannica Student Encyclopedia: The 16-volume Britannica Student Encyclopaedia has more than 2,300 articles with 3,300 photos, illustrations, charts and tables to make it appealing and useful to students. The encyclopaedia has 1,000 maps and flags of various countries of the world

Recent advances in information technology and rise of electronic encyclopaedias such as Microsoft Encarta and Wikipedia has reduced the demand for printed encyclopedia. The publisher of the Encyclopedia Britannica has developed electronic versions of the encyclopaedia on CD-ROM, DVD and World Wide Web.

Encyclopaedia Britannica Online contains the text of 32-volume Encyclopaedia Britannica plus additional articles and images not available in the print set. It has more than 120,000 articles. The site offers natural language searching and A-Z browsing facility. It is continually updated to provide most current information. It has daily features, updates and links to news reports from The New York Times and the BBC. Subscriptions are available on yearly, monthly or weekly basis. Special subscription plans are offered to schools, colleges and libraries. (http://www.britannica.com/)

(b) Subject Encyclopedias

Subject encyclopedia provides detailed information on specific area of knowledge

such as arts and humanities, science and technology, social sciences, etc. There are thousands of subject encyclopedias ranging from broad subject area to a very narrow subject field. There are multi-volume as well as single volume subject encyclopaedias. Some subject encyclopaedias are meant for subject specialists and some are for students and general readers interested in that subject.

Examples of subject encyclopaedia:-

McGraw Hill Encyclopaedia of Science and Technology, 10th Edition, is an English language 20-volume encyclopaedia specifically focused on scientific and technical subjects. The encyclopaedia covers life sciences, physical sciences as well as topics on engineering and technology.

McGraw Hill's website 'Access Science' — provides online access to this encyclopaedia.

McGraw Hill Concise Encyclopaedia of Science and Technology is a one-volume set based on the full set. The latest edition is the 6th edition published in 2009. (http://www.mhprofessional.com)

Encyclopedia of Library and Information Science edited by Allen Kent and published by Marcel Dekker, is a 35-volume set (33-volume main encyclopaedia and 2-volume index) providing librarians, information/computer scientists, and students of library and information science convenient access to tools and techniques of both library and information science. The articles are written by over 1300 subject experts. The publisher regularly brings out supplements (each supplement contains A-Z coverage) which highlight new trends, describe the latest advances and give information about people making crucial contributions to this rapidly growing field. So far 36 supplement volumes have been published (Volume- 36 to Volume- 72).

INTEXT QUESTIONS 7.2

1. Define general encyclopaedia. What purpose does a general encyclopedia serve?
2. How will you categorize a general encyclopaedia?
3. Differentiate between a general and subject encyclopaedia.

7.6 YEARBOOK

Yearbook, as the name indicates, is a book of information that is updated and published annually, i.e., every year. The basic purpose of a yearbook is to record events and developments of the previous year in a country or in the world. Based on their scope and type of information covered yearbooks can be categorized as:-

- International Yearbook
- National Yearbook
- Subject Yearbook

7.6.1 International Yearbook provides reliable and handy statistical information about each country of the world. For example *The Statesman's Yearbook 2012* published by Macmillan, provides political, economic and social account of every country (193 countries) of the world together with facts and analysis. The Yearbook is in two parts.

Part-I deals with International organizations and Part-II deals with countries of the world in alphabetical order. (http://www.us.mcmillan.com)

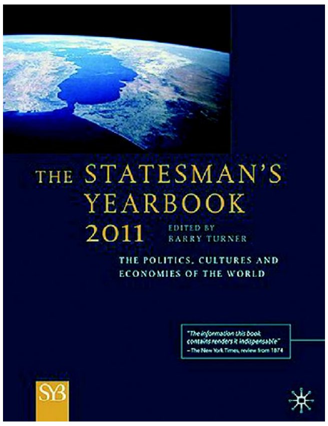
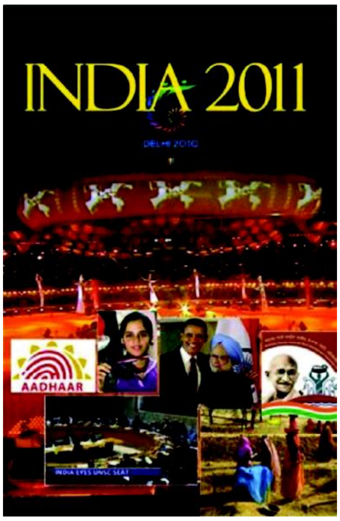


Fig. 7.14



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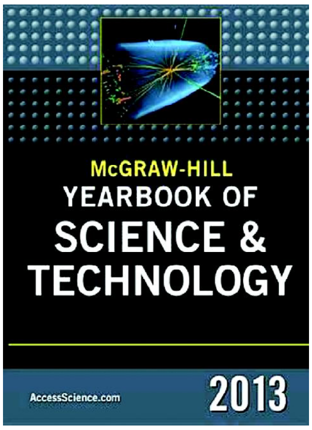

Fig. 7.16

Figures of Year Books

7.6.2 National Yearbook provides up to date political, economic and social account of an individual country. National yearbooks are mostly compiled by the respective government of that country and are considered reliable and authoritative. For example, *India 2012: A Reference Annual,* 56th edition, is a national yearbook published by Publication Division, Ministry of Information and Broadcasting, Government of India. The yearbook provides information on various subjects related to India like economy, rural and urban development, industry and infrastructure, arts and culture, S & T, health, defence, mass communication, etc. (http://www.publicationsdivision.nic.in)

7.6.3 Subject Yearbook: Yearbook devoted to specific subject or group of subjects is a subject yearbook. McGraw-Hill Year Book of Science & Technology-2013 is a subject yearbook.

7.7 ALMANAC

An Almanac is a reference book usually published once a year and contains many kinds of information. Almanacs originally provided a calendar of the months with eclipses, the movement of planets and the rising and setting of sun, moon and stars.

Present day almanacs include a comprehensive presentation of statistical and descriptive data covering the entire world. Major topics covered are geography, government, demographic data, agriculture, economics and business, health and medicine, S&T, transport, sports, awards and prizes. Contents also include articles focusing on events of previous year as well as summary of recent events. Now the almanacs are more like yearbooks. Both depend on government sources for statistical data. The only difference is that almanacs present astronomical data, which is absent in the yearbooks.

Examples of almanacs:-

World Almanac and Book of Facts 2012 published annually in U.S.A. by Barnes & Noble. **Whitaker's Almanack 2012** published annually in U.K. by A&C Black Publishers.

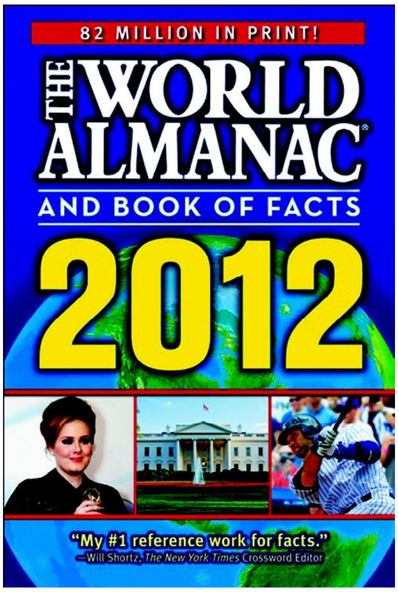

Fig. 7.17

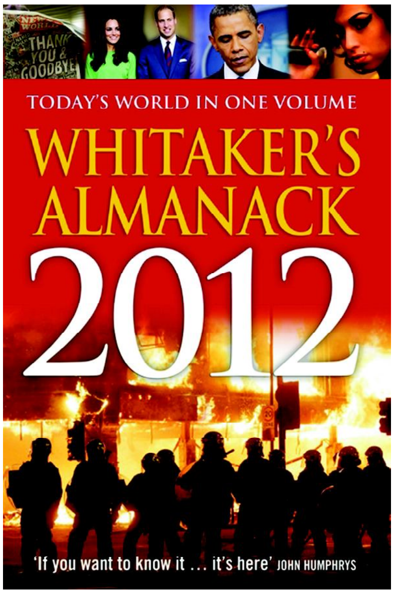

Fig. 7.18

Figures of Almanacs

INTEXT QUESTIONS 7.3

1. Define yearbook and list its types.
2. What is an almanac? State the difference between an almanac and an yearbook.

7.8 HANDBOOK

The word handbook is derived from the German word 'Handbuch' meaning a small book giving useful facts. The literal meaning of the term 'handbook' is a book which is 'handy' to use as it contains useful facts and convenient to carry. Handbook by definition is a concise reference book providing specific information or instruction about a topic or a subject. A **Subject handbook** basically provides brief factual information on a subject. Designed to be easily consulted and provide quick answers, handbooks are widely used by practitioners and specialists working in an industry or a laboratory.

CRC Press brings out a large number of handbooks for practitioners. Some of the examples are:-

Handbook of Chemistry and Physics; Handbook of Lipid Bilayers.

(http://www.crcpress.com)

7.9 MANUAL

The Term 'manual' is derived from the Latin term 'manuals' meaning a guide book. A manual basically provides step-by-step instructions on how to do a particular job or operate a particular machine. When you buy any home appliances, such as a television, an air conditioner, an oven or even a mobile phone, you are provided with a manual which gives proper instructions on how to use that appliance. For example, a cookbook is a manual.

7.10 DIRECTORY

A directory is a list of names and addresses of people and organizations. Directories are also very important reference tools in the library to answer different type of enquiries from the users. Directories can be broadly categorized as

- General Directories and
- Special Directories.

7.10.1 General Directories

A telephone directory comes under the category of **general directories.** You must be familiar with telephone directory. Every city in a country has a telephone directory providing information about telephone numbers and addresses of the subscribers. These directories are usually compiled by post and telegraph departments.

7.10.2 Special Directories

Directories of organizations are called special directories and can be broadly grouped into following three types:-

- Directories of academic and research institutions;
- Professionals Directories; and
- Trade and business directories.

Directories of academic institutions list institutions of higher education and learning such as universities and colleges. Under each academic institution, information regarding, the type of courses and facilities offered, eligibility criteria, names of the senior staff members, etc. are provided. These directories may be international or national in coverage. For instance *'The Europa World of Learning 2012',* 63rd edition, is an international directory. The directory is available in print and online form.

(http://www.routledge.com/)

Universities Handbook, 32nd Edition, 2012 in two volumes, published by Association of Indian Universities (AIU), is a national directory listing 341 university level institutions in India. (http://www.aiuweb.org/)

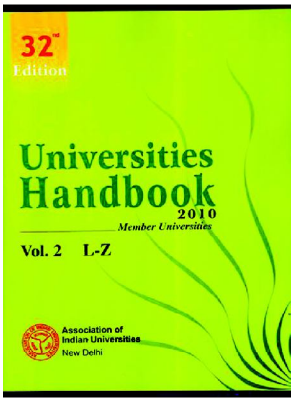

Fig. 7.19

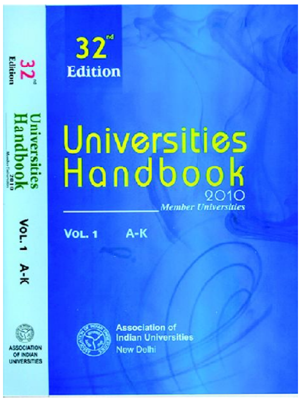

Fig. 7.20

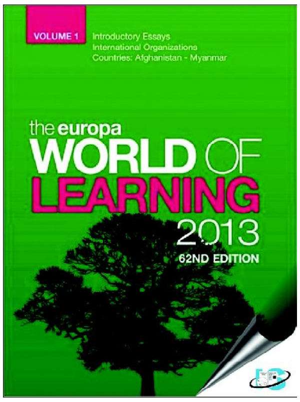

Fig. 7.21

Figures of Universities Handbooks

Notes

The directory provides information on type of courses offered, duration of the course, eligibility criteria, last date for admission, library and research facilities, scholarship and fellowships, names of professors and senior staff members. The directory is published every alternate year.

Professionals Directories: There are thousands of societies and associations in the world, in almost every significant field of knowledge. Members of these associations are scholars in their respective area of specialization. These associations also compile directories listing details of their members.

Example: The University of Adelaide Professional Directory

Trade and Business Directories provide information about trade, business and industries. For example : *Kothari Industrial Directory of India,* 40th edition, 1996, published by Kothari Enterprises.

INTEXT QUESTIONS 7.4

1. Differentiate between handbook and manual.
2. What purpose do directories serve? List different types of directories.

7.11 GEOGRAPHICAL INFORMATION SOURCES

Geographical information sources include maps, atlases, globes, gazetteers and guide books. These sources provide information about places, people, rivers, mountains, forests, lakes etc. To meet information needs of the users, libraries maintain geographical information sources in their reference collection. Though other reference sources like dictionaries, encyclopaedias, yearbooks and almanacs also include information about places, people, etc., but they cover only selected and prominent places. This special collection of geographical information sources covers these topics more comprehensively and is specifically designed to locate the required information quickly. This collection comprises the following three types of sources:-

- Maps, Atlases and Globes;
- Gazetteers; and
- Guide Books

7.11.1 Maps, Atlases and Globes: Map is a pictorial presentation of the earth's surface or part of it, showing countries, cities, rivers, lakes and mountains. A Map can also be a drawing of the sky showing the position of stars and the planets.

Types of maps: There are many types of maps. The most familiar types are:-

- General Reference Maps and
- Thematic Maps

General Reference Maps

General reference maps identify and locate a variety of geographic features. Such maps may include land features, boundaries of water, political boundaries, cities and towns, and many other elements.

Political Maps: Maps that depict boundaries of countries, states, continents and other political units are called political maps.

Physical Maps: Maps that depict the location of physical features of the earth's surface such as mountains, rivers and lakes are called physical maps or terrain maps.

Road Maps, Street Maps and Charts: Some maps are designed to help people to find their way from one place to another. These are maps for travel on land, on water or in the air. Maps showing different categories of roads, such as motorways, four-lane, or six-lane roads are called *road maps.* They also show the cities, towns, parks and other places connected by those roads. *Street maps* are similar to road maps, but a street map shows a much smaller area in much more detail. A map used to navigate a ship or an aeroplane is called a *chart.*

People use general reference maps to locate specific places and to observe their location in relation to other places.

Thematic Maps

Thematic maps show the distribution of a particular feature such as, population, rainfall or natural resources like coal, petroleum, metals and minerals on the earth. Many thematic maps express quantities by means of symbols or colour.

Atlas: A book containing a collection of maps is called an atlas. A big atlas contains the map of every county.

Globe is a map that has been pasted or printed on a hollow sphere. Only a globe can give correct picture of the earth as a whole, as the surface of the globe is rounded like the earth's surface. A globe represents all parts of the earth's surface correctly. The proportions and positions of the earth's land features and oceans in relation to each other are seen on a globe exactly as they are on the earth.

National Maps and Atlases

The reliability of maps and atlases depend upon the expertise of editorial staff and the cartographers. Most of the countries have their own cartographic survey agencies. In India, we have **Survey of India, Dehradun.** It is a National Principal Mapping Agency. This organization is responsible for mapping and production of geophysical maps and aeronautical charts,

National Atlas and Thematic Organization of India (NATMO), Kolkata is involved in the preparation of National Atlas of India, Thematic maps and Digital maps.

National Atlas of India in Hindi popularly known as *'Bharat: Rashtrya Atlas'*, first published in1957 by NATMO, had 26 multi-colour maps portraying physical and socio-cultural structure of the country. The revised edition of *'Bharat: Rashtrya Atlas'*, aims to have 300-multi-colour maps and will be issued in 8 volumes. It will cover all aspects of the land, people and economy of the country. (http://www.natmo.gov.in/).

International Maps and Atlases

The Times Comprehensive Atlas of the World. 13th edition published in 2011, is the most comprehensive atlas of the world with an index of over 200,000 place names. The Atlas begins with contributions from experts in many geographical fields, providing detailed information on key issues facing the world today such as climate change, environmental threats, global communications, biodiversity and energy resources, with supporting maps, photographs and graphics to illustrate the physical world today and man's interaction with it.

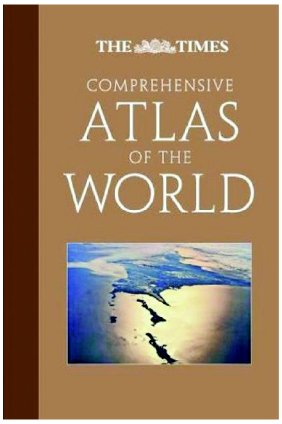

Fig. 7.22 Comprehensive Atlas of the World

The publisher has published a wide range of Atlases. Some of the titles are as follows:-

- *The Times Concise Atlas of the World;*

- *The Times Atlas of the World Desktop Edition;*
- *The Times Atlas of the World Mini Edition*

(http://www.timesatlas.com/)

7.11.2 Gazetteers

A gazetteer is a dictionary of geographical names. It lists names of places, seas, mountains and other geographical entities of particular area along with its history, economic development, geography and the people. As a reference source, a gazetteer provides historical, social, cultural, political, industrial, demographic and administrative details of a country, state or a district.

Based on their coverage, gazetteers can be categorized into

- International Gazetteer,
- National Gazetteer; and
- Local Gazetteer.

International Gazetteer

Merriam Webster's' Geographical Dictionary, 3rd edition is an international gazetteer with 54,000 entries, plus 250 detailed maps.

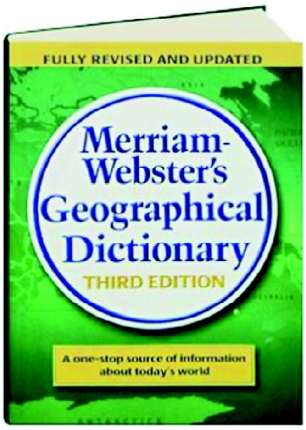

Fig. 7.23 Geographical Dictionary

National Gazetteer

Gazetteer of India -The Indian Union, New Delhi: Publication Division, 1965-78 is in 4 volumes.

Volume I: Country and People.

Volume II: History and Culture.

Volume III: Economic Structure and Activities.

Volume IV: Administration and Public Affairs.

District Gazetteer

Singh, Raghbir & Ranga, Jeet Ram, ed. *Haryana District Gazetteer*. Chandigargh: Haryana Gazetteer Organisation, 1986

7.11.3 Guide Books

Guide Books are basically travel guides or tourist guides meant for people who want to visit various places in their own country or any other part of the world. The main purpose of a guide book is to counsel the travellers when to visit a particular place, how to reach, where to stay, what to see, and what to buy. The travel guides include information on historical sites, museums, parks, and other places worth visiting in that city or a country. Other aspects covered are information on the routes and travel facilities, best time to visit the place, the types of hotels, restaurants and shopping complexes, etc. Maps, illustrations and distances are also provided to enhance the usefulness of the guide book. In addition, information regarding visa, money exchange, weather, etc. is also given for the benefit of the visitors. Usually a guidebook covers a region, a country or a city.

Tourism Departments of the Governments in most of the countries bring out tourists guides to promote tourism in the country.

In India, most of the States (28) and Union Territories (7) have State Tourism Departments which provide information and bring out tourists guides. Ministry of Tourism, India and most of the State Tourism Departments have also launched their websites for the benefit of the visitors. These sites provide up-to-date information to the users. Some of these websites are as follows:-

http://www.incredibleindia.org/

http://www.delhitourism.nic.in/

Many printed guidebooks are also available. Fodor's guidebooks for a large number of countries of the world and a few major cities are famous. (http://www.fodors.com/).

7.12 BIOGRAPHICAL INFORMATION SOURCES

A biography by definition is an account of a person's life, usually written by someone else and is intended to be published. Biographical sources are

publications listing biographical details of famous people. Such sources cover biographies of world leaders, people holding key positions in international organizations, people with outstanding performance in sports, music, dance, acting and other professional fields like science & technology, medicine etc. A biographical source may contain a biography of an individual or biographies of a group of people (called collective biographies). A book containing collective biographies is also called **'Biographical Dictionary'**, for example *'The Dictionary of International Biography'*.

The type of information covered in such sources also varies from a brief factual sketch to a detailed essay for each entry. Some biographical sources cover famous people from all walks of life. Such sources are called **'general biographical sources'**. In some sources, the coverage of people is restricted to a single discipline or some other special criteria. Such biographical sources are called **subject/special biographical sources**. Again a biographical source may be **international or national** in scope depending upon the coverage of persons. Some biographical sources deal with living persons only, e.g.' **Who's Who'.** While some contain persons who are no longer living, e.g. **'Who was Who.'** Some sources include life sketches of both living and dead persons e.g. *Webster's Biographical Dictionary* ..

Some examples of biographical sources:-

General Biographical Sources- International

Who's Who in the World 2013, 30th Edition. Known as Maquis' Who's Who is an American publication providing biographies of the world's most noteworthy people. Information provided in each entry contain personal data and career history, education, achievements and membership of any society. The publication is also available online.

(http://www.marquiswhoswho.com/)

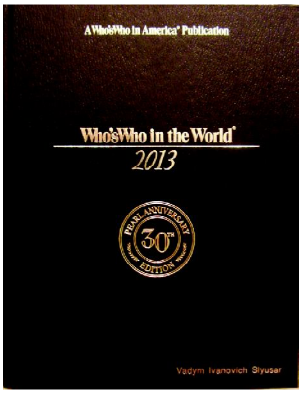

Fig. 7.24

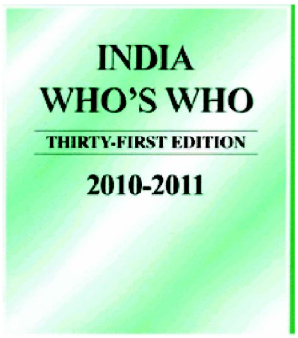

Fig. 7.25

Figures of who's who

General Biographical Sources - National

India Who's Who, 31st Edition. 2010-2011, published by INFA Publications, contains 5000 concise biographies of prominent Indians from all walks of life including politics, civil service, education, arts, entertainment and sports. Entries are arranged profession wise.

INTEXT QUESTIONS 7.5

1. Differentiate between physical, political and thematic maps.

2. Fill in the blanks with suitable words:-

   a) A map that is used to navigate a ship or an airplane is called a _________.

   b) A map pasted or printed on a hollow sphere is called a ___________.

   c) A book containing a collection of maps is called ______________.

   d) A _________________ is a dictionary of geographical names.

   e) Guide books are basically designed for the ______________.

   f) A dictionary containing collective biographies is called___________________.

WHAT YOU HAVE LEARNT

- A reference source provides answers to factual asked questions, statistical information, background information, or directs one to an additional information source. The reference sources are standard works that one can use to locate specific type of information.

- Reference sources comprise dictionaries, encyclopaedias, yearbooks, almanacs, handbooks, manuals, directories, geographical and biographical information sources.

- Dictionaries define the words and encyclopaedias provide background information about the words.

- General unabridged dictionaries cover all the words of a language. Abridged, collegiate, desk and pocket dictionaries cover words of a language currently in use. Words in children's dictionaries are usually confined to the course curriculum.

- Subject dictionaries provide definition of the words in a given subject area.

Notes

- Special dictionaries deal with linguistic or literary aspect of the words or with special types of words.
- Bilingual and multilingual dictionaries are translating dictionaries.
- Encyclopaedias are of two types viz. general encyclopaedia and subject encyclopaedias. An encyclopaedia may be in a single volume or a multivolume set. An encyclopaedia may be specially put together for adults, college students, school children, or kids.
- Yearbooks and almanacs trace previous years' events and developments in a country or all the countries of the world. Both, yearbooks and almanacs depend on government sources for statistical data. The basic difference is that almanacs present astronomical data which is absent in the yearbooks.
- Handbooks contain practical information on a subject and are used by engineers and practitioners in their day-to-day work.
- A manual is a book of instruction providing step-by-step instructions on how to do a particular job or operate a particular machine.
- A directory is a book listing names and addresses of people and organizations.
- Geographical information sources comprise maps, atlases and globes, gazetteers and guide books.
- General reference maps identify and locate geographic features of the earth's surface like mountains, lakes, forests, rivers etc. Thematic maps show the distribution of particular feature such as population, rainfall, or natural resources like coal, minerals, petroleum, metals etc. on the earth's surface.
- A gazetteer lists names of places, seas, mountains, rivers and other geographical entities of a particular area along with its history, economic development, geography and the people.
- Guide books are designed for the travellers to provide handy and practical information for a particular place such as when to visit, how to reach, where to stay, and what to see etc.
- Biographical information sources are publications providing biographical details of famous people.

TERMINAL QUESTIONS

1. Differentiate between dictionary and thesaurus. Describe different types of dictionaries.

2. Briefly describe geographical information sources.
3. Describe different types of encyclopaedias.

ANSWERS TO INTEXT QUESTIONS

7.1

1. Reference sources provide answers to brief facts, statistical information, background information, or direct the searcher to additional information sources. The reference sources are standard works that one can use to locate specific type of information.
2. General language dictionaries cover all the words of a language and give meanings, definition, and explanation of the words in the same language. General Language Dictionary can be further divided according to size and target user group. According to size, general language dictionary may be comprehensive/unabridged, abridged/college/desk, or pocket dictionary. According to target user group general dictionary may be for school children, students and adults.
3. The special dictionaries deal with special types or special aspect of the words. Special type or class of words include obsolete words, acronyms, abbreviations etc. Special aspect of the word includes pronunciation, synonym and antonyms, quotations, idioms, proverbs, etc. Though most of these aspects of the words are covered by general language dictionaries as well, but special dictionaries cover these aspects much more comprehensively. Special dictionaries supplement general language dictionaries.

7.2

1. A general encyclopaedia is a book or set of books giving information on topics in every field of knowledge with articles arranged alphabetically. General encyclopaedia enriches general knowledge, provides information on different topics and provides bibliography at the end of articles which helps to find more information on that topic.
2. General encyclopaedias can be categorized according to size, such as multivolume or single volume set or target user group, such as encyclopaedia for adults, students and children.
3. A general encyclopaedia includes information on topics in every field of knowledge, while a subject encyclopedia provides detailed and technical

information on specific area of knowledge such as arts, science and technology or social sciences.

7.3

1. A yearbook, published and updated annually, records events and developments that took place in the previous year in the world or in a particular country. Based on their scope and type of information covered, yearbooks can be categorized as international, national and subject yearbooks.

2. Yearbooks and almanacs trace previous years' events and developments in a country or all the countries of the world. Both yearbooks and almanacs depend on government sources for statistical data. The basic difference is that almanacs present astronomical data which is absent in the yearbooks.

7.4

1. Handbook gives brief factual and practical information on a subject such as, formulae, definition, diagrams, tables etc. Handbooks are used by engineers and practitioners for factual information in their day-to-day work. On the other hand, a manual is a book of instruction providing step-by-step instructions on how to do a particular job or operate a particular machine. Both are ready reference sources consisting of 'facts to know' and 'instructions to do' type of material.

2. Directory is a book listing names and addresses of people and organizations. There are general directories and special directories. A Telephone directory is a general directory listing names, addresses and telephone numbers of people residing in a city, town or a locality. These directories help to contact people. Special directories include directories of academic and research institutions, professional directories, and trade and business directories. Directories of academic and research institutions help to identify experts in different disciplines and the type of courses offered by these institutions. Professional directories help to identify experts. Trade and business directories help to locate type of industries, their products and services.

7.5

1. Physical maps depict the location and physical features of the earth's surface such as mountains, rivers and lakes. Political maps depict the boundaries of continents, countries and states. Thematic maps show distribution of particular feature on the earth, such as population, rainfall, natural resources etc.

2. a) chart; b) globe; c) atlas; d) gazetteer; e) travellers; f) biographical dictionary

GLOSSARY

Antonym : A word that means opposite of another word.

Database : A collection of related records or information stored on a computer and organized to make any part of it easily accessible

Etymology : The study dealing with history or origin of the word.

Synonyms : A word that means the same or nearly the same as another word in the same language.

SUGGESTED ACTIVITIES

1. Go to a library and pick up a dictionary. Write down its title, name of the publisher, date of publication. Read the instructions given in the beginning on how to use the dictionary. See how words are arranged in the dictionary. Find out the meaning of the word 'Communication'.

2. Pick up an encyclopedia in the library. Write down its title. If it is multivolume encyclopedia, write how many volumes are there. Write down how words are arranged in the encyclopedia. Look up for the word *'Communication'* in it. State how the treatment of the word is different in this encyclopedia than that in the dictionary.

3. Visit a public library. See where reference books are kept. Pick up one title each of a dictionary, encyclopaedia, yearbook, almanac, handbook, manual and biographical source. Write down the title, name of the publisher and date of publication of each source.

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8

ELECTRONIC RESOURCES

8.1 INTRODUCTION

The advent of Internet has dramatically changed the way people and institutions function. It has led to tremendous change in the way libraries function and offer services to their users. At present, the libraries actively procure, organize, display and issue e-forms of books, journals, newspapers, theses and dissertations. This is also due to change in information seeking behavior of users. The new generation of users prefer online resources as they want all information at the click of mouse. The e- resources have certain inherent characteristic features which offer convenience to the users. This lesson discusses the concept and importance of e-resources. It deals with different types of e-resources, their advantages and disadvantages.

8.2 OBJECTIVES

After studying this Lesson you will be able to:

- comprehend the definition and importance of e- resources;
- categorize different types of e-resources;
- define e- books and e- journals;
- understand the concept of electronic databases; and
- distinguish between bibliographic and full text databases.

8.3 E-RESOURCES

An e- resource is material which requires computer mediation in order to access its content and make it useful. Both online and offline resources such as CD-

ROMs fall within the scope of e- resources. The term e-resource refers to all the products which a library provides through a computer network.

The electronic resources are also known as online information resources covering bibliographic databases, electronic reference books, search engines for full text books, and digital collections of data. They include both "born digital" material which has been produced directly online. For example-e- journals, databases, and print resources which have been scanned and digitized. The electronic resources, e-journals, online databases are not "owned" by the libraries as they own the print material. Ownership of electronic resources lies with the providers of these resources. Access to the electronic resources may be free via Internet or may be available against a fee.

Some of the examples of e- resources are magazines, encyclopedia, newspapers, journals or articles published in them. These may be accessed on Internet connected devices such as computers, tablets, smart phones, etc.

8.3.1 Advantages of e- resources

E- resources have many advantages; some of these are :

- E-resources may be accessed over the Internet. The users need not physically visit the library. This is very useful for the users who reside in remote and far flung areas. The users may download the articles and save them in their PCs.
- The same resource, i.e., article or journal may be accessed by many users at the same time.
- E-resources may be accessed from anywhere, anytime as per the convenience of the users.
- The users may search a large number of resources in one go through a single search interface.
- E-Resources also provide usage statistics which help the library staff in finding out the usage of the product .
- Articles/issues of journals appear online before their print version is available.
- Hypertext format and links of e- resources lead users to related content and articles.
- Electronic resources have audio, video and animation content which is not present in print format.
- The subscription of e- resources helps libraries in saving space.

8.3.2 Disadvantages of e- resources

- The readers need to have access to Internet in order to read electronic resources.
- If a library cancels or stops subscription to an e-journal, it is not certain that the library will get access to back issues of that journal. Whereas, library having printed material certainly has back issues of that journal in its possession. In case of e-books too, if a library stops subscription to e-books, it is denied access to the e- book. Whereas the physical copy once bought always remains in the possession of the library.
- Use of e- resources entails reading on screen which is tedious and harmful too.

8.3.3 Managing e-resources

The management of e- resources involves the following:

Selection

E-resources may be selected by any of the following methods:

1. Serendipity (finding by chance something which is useful and beneficial) while surfing the Internet
2. Faculty recommendations
3. Reviewing the electronic journals provided by other libraries
4. Publisher advertisements

Acquisition

A Library acquires print resources for ownership. But for electronic resources, the libraries simply get license for access rights. Some important activities involved in acquisition of e- resources are as under:

1. Determining the price
2. Negotiating with the vendor
3. Completing the licensing agreement
4. Allocation of funds
5. Placing the order
6. Verifying if the title is accessible
7. Communicating with the vendor if it is not accessible
8. Processing the invoice for payment

Staffing

The library has to decide if acquisition functions for e-journals will be performed by the regular staff or staff with expertise in dealing with electronic format. In order to acquire and process electronic resources, the staff requires the skill of negotiating licenses, familiarity with the electronic format, etc.

Licensing

A license is usually a written contract or agreement between the library and the publisher. An agreement has various aspects like method of calculating payment, definition of users, restriction on use, archival rights, etc. Licensing agreements are generally written for the vendors' advantage, so the library staff has to be extra careful to negotiate favourable terms for the library.

Budgeting

Libraries usually have a separate budget for procuring e-resources.

Cataloguing

E-resources are catalogued and details are entered in to library's OPAC. Some libraries may decide to list them on the website and provide their links.They may not catalogue them.

Maintenance

For e-resources, maintenance is an important issue. Library has staff to maintain e- resources. The staff ensures that the subscribed e-resources are accessible on IP (Internet Protocol) ranges of the institute. Some of the e- resources are accessible through Username (UN) and Password (PW). The staff is entrusted with the responsibility of distributing UN/PW to the authorized users. In case, an e-resource is not accessible and the staff cannot resolve the problem, the same is communicated to the publisher to resolve the problem.

Staff Training and User education

The staff has to be trained in accessing, browsing and retrieving information from e- resources. Libraries need to conduct user education programmes in order to teach the users how to use e-resources and thus promote and enhance the use of e- resources among the users.

8.3.4 Categories of E-Resources

There are different types of e-resources as mentioned below:

- E-journals
- E-Books

Notes

- Electronic databases
- E-reports
- E-Theses and dissertations
- Institutional repositories

These have been dealt with in the following sections.

8.4 E- JOURNALS

An e-journal has been defined as a periodical publication which is published in electronic format usually on the Internet. A periodical publication means that it has some periodicity i.e., It may be published weekly, fortnightly, monthly, quarterly or annually. The term electronic journal has been used for the following:

- An electronic version of an established print journal like *Cell, New Scientist, Scientific American, etc.*
- An e- only journal like *Ariadne, D-Lib magazine,* etc.
- An established journal could stop its print version and transfer to e- only format.
- An electronic journal can be free or fee based through annual subscription, licensing or pay per use.

The screenshot of Nature journal is given below:

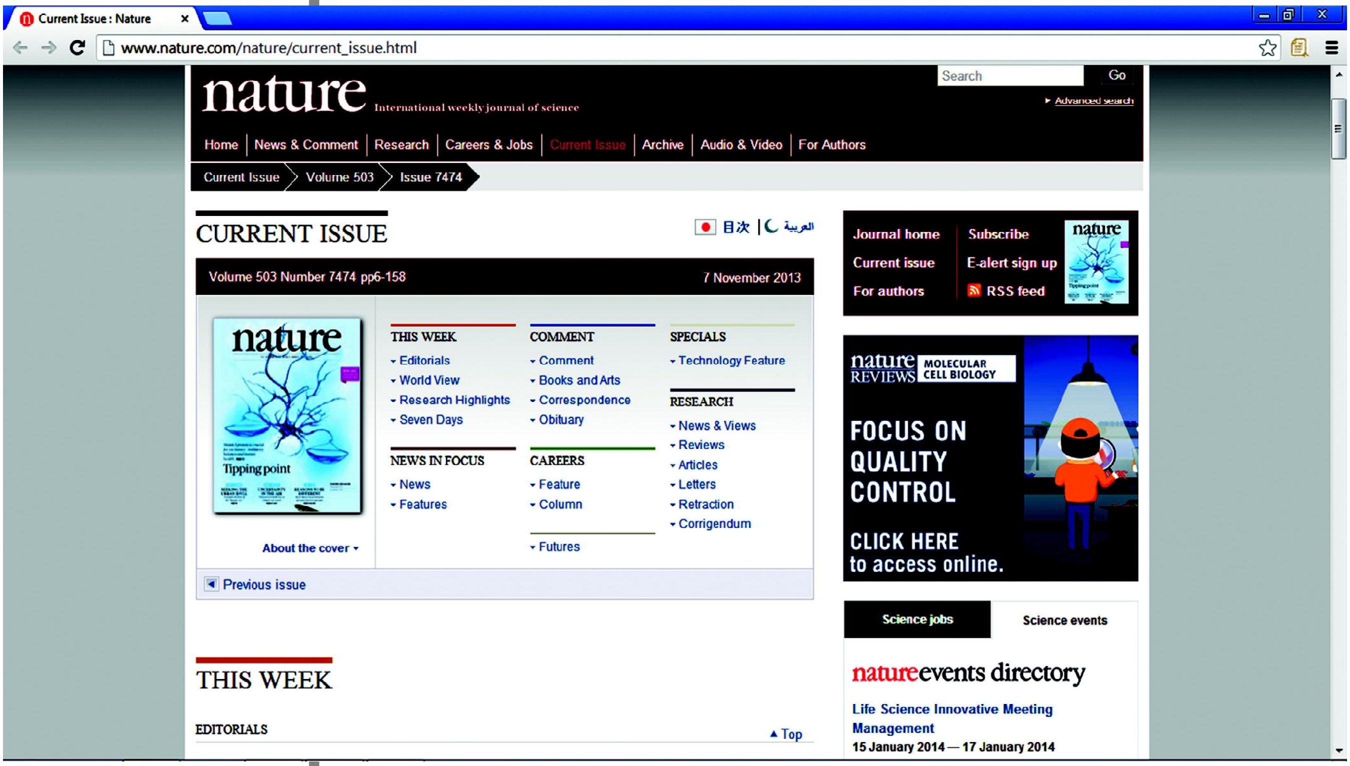

Fig. 8.1 Snapshot of Nature journal

Source:http://www.nature.com/nature/current_issue.html

8.4.1 Advantages of E-journals

E- journals have the following advantages :

- can be accessed from anywhere and any time;
- can be searched non sequentially using keywords;
- additional content is provided which may not be available in print;
- storage and binding concerns are eliminated; and
- back issues can also be accessed with the current ones.

8.4.2 Disadvantages of E-journals

Same as for e- resources given at 8.3.2.

8.4.3 Library consortia

Libraries procure subscription to e- journals through consortia in order to save on money. In this consortia approach, libraries form an association or network or cooperative organization to procure and share journals. Some of the examples of consortia which provide access to e- resources are as under:

DeLCON-Electronic Library Consortium-(**delcon.gov.in**/)

UGCInfoNet digital Library consortium(http://www.inflibnet.ac.in/econ/)

INTEXT QUESTIONS 8.1

1. What is an e- resource?
2. State at least three advantages of e- resources.
3. List at least two disadvantages of e- resources.

8.5 E- BOOKS

An e- book, also known as electronic or digital book is a text and image based publication in digital form. It is produced or published to be read on computer or other digital devices. E- Books are the digital equivalent of standard printed books. E-books are available in a wide variety of formats. Some may be downloaded in full to be read offline, whereas others may only be read online while connected to the Internet.

8.5.1 Advantages of e-books

The advantages of e- books are listed as under:

- Can be accessed from anywhere and any time
- The readers may make notes, save and print a number of relevant pages
- The books may be searched for keywords.
- Access the video and audio content
- The problem of space and storage in libraries is reduced or eliminated
- E- books also eliminate damage, loss and security concern
- Old titles do not go out of print
- Low production, shipping and handling charges.

8.5.2 Disadvantages of e-books

- The libraries have to procure more number of licenses in order to provide their access to more number of users.
- E- books require power or electricity to be accessed. In case, there is power shortage, the users cannot access the book.
- The publishers use DRM (Digital Rights Management) software to control access to e- books. This limits the ability of the users to share an e- book with others.

INTEXT QUESTIONS 8.2

1. What is an e- book?
2. Write the advantages of e- books

8.5.3 Accessing or using e- books

E-books are supplied by different publishers and suppliers. The access models, terms and conditions of use may differ from publisher to publisher.

- There are different kinds of suppliers and business models for e-books in the market. The business models refer to the various options offered by publishers and vendors to sell e- books to the libraries.
- The number of users who can use an e-book at the same point of time

may vary from publisher to publisher. The e-books open on a first come first served basis.

- E- Books are subject to strict copyright laws and digital rights management. Copyright laws allow users to print or copy one chapter or 5% of an e-book whichever is greater. Most publishers restrict the amount you can print or copy and some publishers don't allow users to copy or print. Some publishers allow e-books to be downloaded for a fixed period only.

In order to access the e- books the users must have the following:

- Internet connectivity
- Up to date Internet browser such as Internet explorer, Chrome, or Firefox
- An up to date version of AdobeAcrobat Reader as most e- books use PDF files (this is the format in which the e- books are displayed).
- E- Books may be read on computer or may be transferred to any other reading device like Kindle, Android, ipad, iPhone, Kobo, e- book reader, Nook (it is an e- book reader which has been developed by an American book retailer Barnes and Noble), Sony Reader, etc.
- The library pays for access to e-books which are hosted on a third party website. When a user wants to access an e- book, he downloads a file which automatically expires after some days. It is just like a user visiting a physical library for getting a book issued for a week or two, after which the same has to be returned to the Libraries.

Some of the examples of suppliers of e- books are given as under:

- Myilibrary (http://www.myilibrary.com/)
- E-brary (http://www.ebrary.com/corp/index.jsp)
- EBSCO (http://www.ebscohost.com/ebooks/home)
- Springer (http://www.springer.com/librarians/e-content/ebooks?SGWID=0-40791-0-0-0)

Springer offers access to more than 88,000 e- books through Springer Link. Libraries can either purchase the entire annual collection or may purchase a number of subject collection as per their requirements. For getting individual titles, libraries have to contact the aggregators or online stores like amazon.com or springer shop at springer.com. The screenshot of the Springer homepage is given as under:

Fig. 8.2 Snapshot of Springer website

Source:http://www.springer.com/librarians/e-content/ebooks?SGWID=0-40791-0-0-0

Oxford University Press provides access to 8000 academic monographs from twenty subject areas, including humanities, social sciences, medicine, law, etc. The platform is popularly known as Oxford Scholarship Online .The collection is regularly updated with new titles, three times a year.

The screenshot of Oxford Scholarship Online is given as under:

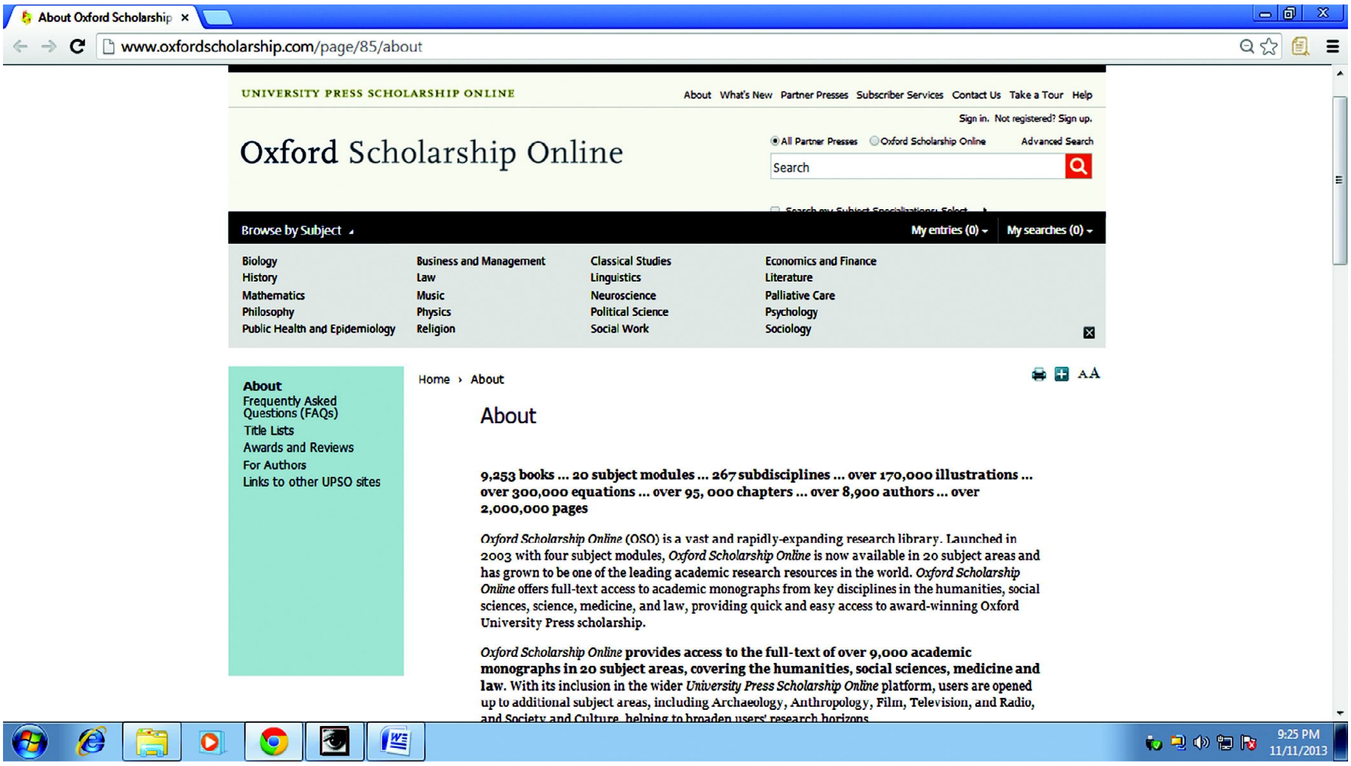

Fig. 8.3 Snapshot of Oxford Scholarship Online

Source :http://www.oxfordscholarship.com/page/85/about

Safari Technical Books Safari provides 8000 e-books from over 100 publishers, specializing in computer application user and training manuals. http://www.safaribooksonline.com/mkt/brochures/html/WhoWeAre.html

There are many e- books freely available on the internet. Some of them are given as under :

- CARRIE: Full Text electronic Library (http://vlib.iue.it/carrie/)
- Free books (http://www.e-book.com.au/freebooks.htm)
- Internet Classics Archive (http://classics.mit.edu/)
- Internet Public Library (http://www.ipl.org/)
- Online Books Page (http://digital.library.upenn.edu/books/)
- Project Gutenberg (http://www.gutenberg.org/wiki/Main_Page)
- UC Press e- books Collection (http://publishing.cdlib.org/ucpressebooks/)

It is certain that e- books will not replace print books in the forthcoming years. The users, researchers and faculty members may rapidly adopt them as complementary to print books. The users value the convenience and ease of accessibility that e- books provide. It is estimated that in the next five years the users, researchers and faculty members will prefer the electronic version of some books-the transition will be faster for research related activities. E-Books are appropriate for research purposes or in a search environment where the user needs to locate specific information. The users do not read e-books cover to cover in the traditional sense, rather they consult them as a resource for locating answers to research questions.

INTEXT QUESTIONS 8.3

1. Write the names of two publishers of e- books.
2. Discuss why printed books will not be replaced by e-books in all fields.

8.6 ELECTRONIC DATABASES

The term “database” is used to refer to a collection of records which may have numeric, textual or image based data. If it is accessible via WWW, it is known as online database. Before the advent of Internet, these online databases were available as CD-ROM databases. A journal database is a collection of journal

articles arranged in individual records which can be searched. The databases can be bibliographic or full text ones.

8.6.1 Bibliographic databases

A bibliographic database is a database of bibliographic records; it is an organized digital collection of references to published literature. It may be general in nature or may be in a particular subject area. **J-Gatehttp://j-gate.informindia.co.in**. is a bibliographic database which provides access to journal literature, indexed from 29513 e- journals of 9483 publishers with links to full text at publishers' sites. The database is accessible against a fee. All the electronic databases provide citations, which give the readers the basic publication information about the article or resource- such as, title, authors, date and source of publication.

The majority of the databases which provide citations also have abstracts, which are brief summaries of the article or resource. The users and researchers can learn a lot about an article just by carefully reading the citation and the abstract; this in turn will help them decide whether they want to read the full article or not. In simple words, the abstracts are very popularly used by the researchers as they offer a quick and effective means of checking relevance and comparing articles from the voluminous literature available in a particular discipline; in certain cases they may offer appropriate substitute for the whole research article. Some other examples are as under:-

- **Abstract on Hygiene and Communicable Disease (AHCD)**

http://www.cabi.org/default.aspx?site=170&page=1016&pid=70

- **Current Contents**

http://thomsonreuters.com/products_services/science/science_products/a-z/current_contents_connect/

8.6.2 Full text databases

The databases which provide full text of journal articles, book chapters, conference papers etc. are known as full text databases. Examples are Science Direct, JSTOR and PROQUEST. Full text access means that the users can view, save or print the full text article.The full text article can be in HTML or PDF format. The advantages of full text databases are as under:

- Save the time of user in locating full text of an article
- Meet users' expectations by offering the full text of material they see indexed in secondary journals

- Ensure users to have access to the very latest research
- Contain the full volumes including back issues of a growing number of journals.

Wiley Online Library is a multidisciplinary full text database of online resources from the fields of life, health, physical and social sciences. It provides access to over 4 million articles from 1500 journals, over 11,500 online books, reference works and laboratory works. The screenshot of Wiley Online Library is given below:

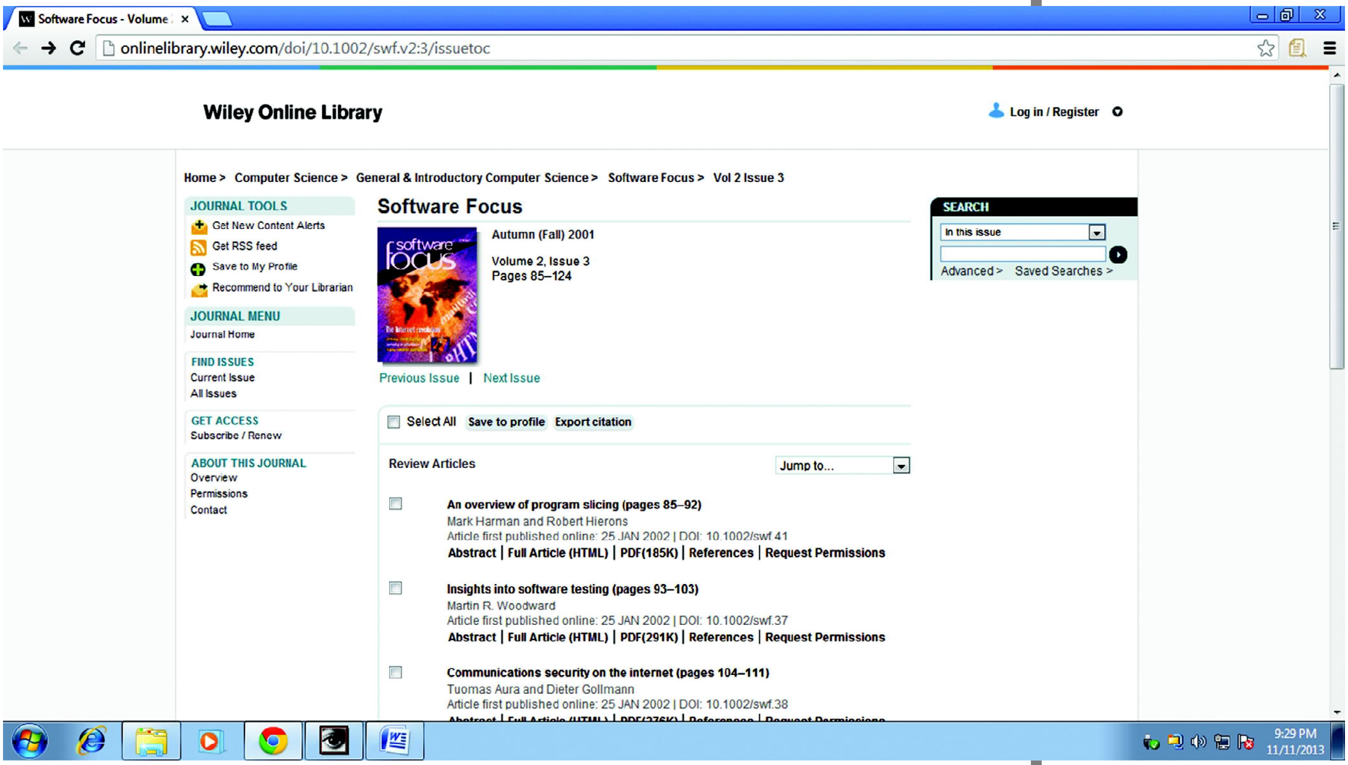

Fig.8.4 Snapshot of online library

Source: http://onlinelibrary.wiley.com/doi/10.1002/swf.v2:3/issuetoc

Other Examples:

- CABI full Text(http://www.cabi.org/)
- Academic search Complete (http://www.ebscohost.com/academic/academic-search-complete)
- JSTOR (http://www.jstor.org/)
- Project MUSE (http://muse.jhu.edu/)

INTEXT QUESTIONS 8.4

1. What is an electronic database?
2. What is a bibliographic database?
3. How do citations and abstracts assist researchers?

8.7 E- REPORTS

A report is a document which contains information in a narrative, graphic or tabular form; it is prepared on adhoc, periodic or regular basis as per requirement. A report may refer to some specific period or event or subject. It may be communicated to the public orally or in written form. A report which is available in digital form is known as an e- report.

For example, the universities publish annual reports which give an account of their budget, expenditure, activities and achievements. These reports are also made accessible on Internet.

The screenshot of annual report of Jawaharlal Nehru University is given as under:

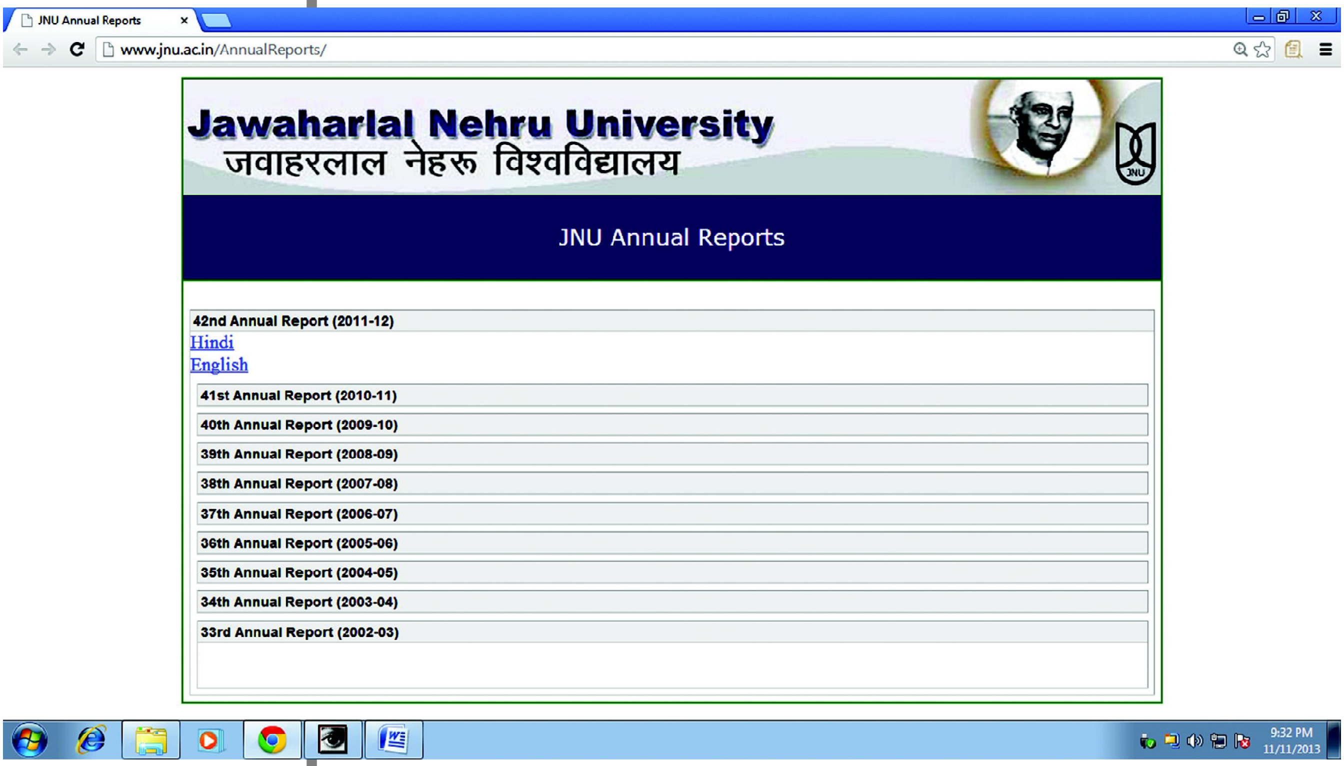

Fig. 8.5 Snapshot Jawaharlal Nehru University website

Source: http://www.jnu.ac.in/AnnualReports/

The Planning Commission, Government of India publishes reports of the various projects initiated and completed, committees constituted for accomplishing various tasks. The screenshot of reports published by Planning commission, Government of India is given as under:

Fig. 8.6 Snapshot Planning Commission of India website

Source:http://planningcommission.nic.in/reports/genrep/index.php?repts=b_repgen.htm

8.8 E-THESES AND DISSERTATIONS

A thesis or dissertation is a document submitted in support of candidature for an academic degree or professional qualification. It presents work or research, undertaken by a student, and its results or findings .The users submit theses and dissertations to the universities/institutions in print.The digital form of theses and dissertations are known as e- theses and dissertations. The research scholars doing M.Phil and PhDs in Indian universities are required to submit digital or soft copies of their theses and dissertations. The libraries are at present

digitizing the theses and dissertations held by them and making them accessible on Internet. The collection of digital theses and dissertations is also known as digital repository. The screenshot given below shows the digital repository of Indian Institute of Science, Bangalore.

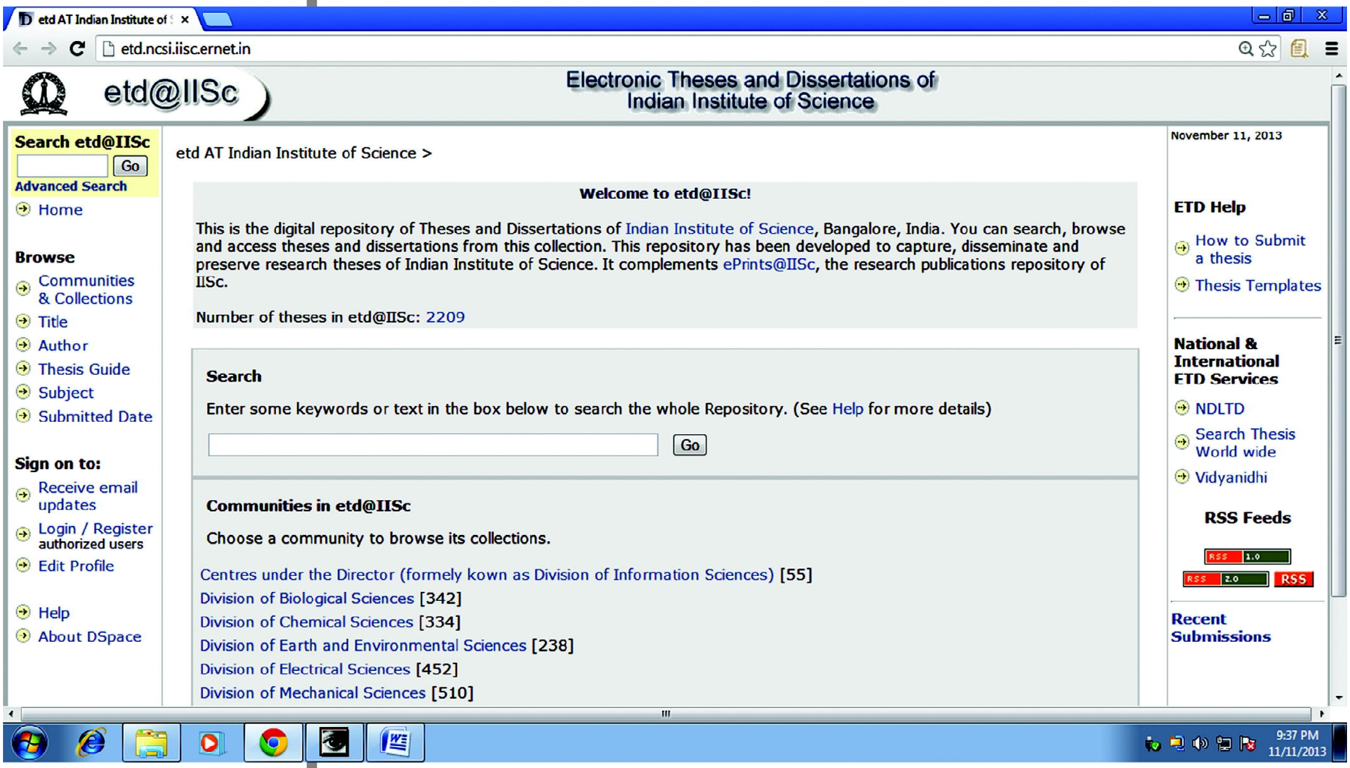

Fig. 8.7 Snapshot Institute of Science website

Source: http://etd.ncsi.iisc.ernet.in/

Other examples are as under:

The Shodhganga@INFLIBNET Centre provides a platform for research students to deposit their Ph.D. theses and make it available to the entire scholarly community in open access. The repository has the ability to capture, index, store, disseminate and preserve e-thesis and dissertations submitted by the researchers.

Vidyanidhi: Indian digital library of electronic theses by University of Mysore

8.9 INSTITUTIONAL REPOSITORIES

An institutional repository is an online database which provides access to the digital collections of theses, dissertations, e-prints etc., of a particular institution for online viewing. It provides associated metadata regarding the document, i.e., name of the student, university name, year of graduation, document title, abstract, keywords, etc. Institutional repositories are also known as digital repositories. The universities and research institutions set up these repositories to collect, organize and showcase the intellectual contribution of their faculty members and scientists. These institutional repositories may also provide access to annual reports, question papers of the past years, preprints of the articles published by the teachers and scientists of the university and institute. The screenshot of the institutional repository, known as e-prints@IISc, of Indian Institute of Science is given below:

Fig. 8.8 Snapshot online database of thesis and dissertations

Source:http://eprints.iisc.ernet.in/

WHAT YOU HAVE LEARNT

The advent of Internet has brought a paradigm shift in the way the libraries procure, organize and disseminate information resources.

- Libraries are actively procuring e- resources, besides the print collection for their users. The users prefer e- resources because of the convenience which they offer to them.
- The e- resources can be accessed from anywhere. Large number of resources can be searched in one go through a single search interface; hypertext and links in e- resources further lead the users to the related content.
- Some of the e- resources are e- journals, online databases and e- books.
- There are publishers, vendors and aggregators who provide e- resources to the libraries through different business and access models.
- While the printed resources are owned by the libraries, e- resources are not owned by the libraries. Libraries only have access rights for them.

TERMINAL QUESTIONS

1. Discuss different e- resources with examples.
2. Explain with examples the difference between a full text and bibliographic database
3. Define institutional repositories and give examples.
4. What are e-theses and dissertations? Explain with examples.
5. How are e- resources managed in libraries?

ANSWERS TO INTEXT QUESTIONS

8.1

1. An e- resource is any information source which is accessible in an electronic format. The examples of e- resources may be e- journals, databases, newspapers, magazines etc. It requires computer mediation in

order to access its content and make it useful. Both online and offline resources such as CD-ROMs fall within the scope of e- resources.

2. The advantages of e- resources are as under:

(i) E- resources may be accessed over the Internet from anywhere in the World. The users need not physically visit a library. This is very useful for the users who reside in remote and far flung areas. The users may download the articles and save them in their PCs.

(ii) The same resource- article, journal may be accessed by many users at the same time.

(iii) E- resources do not require any physical space for storing like printed resources, which require too much space for storing them.

3. The disadvantages of e- resources are as under :

(i) The readers need to have access to Internet in order to read electronic resources. If a reader does not have Internet connectivity, he cannot access or read electronic resources.

(ii) If a library cancels or stops subscription to an e- journal, it is not certain that the library will get access to back issues of that journal. On the other hand when library stops subscription for the printed Journals, the library of e- books too, if a library stops subscription to e- books, it is denied access to the e- book, whereas the physical copy once bought always remains in the possession of the library.

8.2

1. An e-book, also known as electronic or digital book is a text and image based publication in digital form. It is produced or, published to be read on computer or other digital devices.

2. The advantages of e- books are as under:

   I. They can be accessed both from on and off campus.

   II. The problem of space in libraries is eliminated.

8.3

1. The publishers of e- books are as under:

   i. Springer : http://link.springer.com/

   ii. Taylor and Francis: http://www.tandfebooks.com/

2. E-books are used more by researchers because of their convenience to access and search information even the very latest. In other fields, printed books are still very popular.

8.4

1. The Electronic databases which provide access to the full text of the articles published in journals are known as full text databases. JSTOR http://www.jstor.org/ is an example of full text database .

2. A bibliographic database is a database of bibliographic records; it is an organized digital collection of references to published literature. It may be general in nature or may be in a particular subject area.

3. Citations and abstracts help researchers by leading them to different articles and by helping to decide if they should read the whole article or not.

GLOSSARY

Born digital: It refers to material which originates in digital form, rather than being produced in print and then digitized through scanning.

Digital Rights management (DRM): The term covers the description, identification, trading, protection, monitoring and tracking of all forms of rights usages relating to the digital material. DRM software is used with e- book in such a manner that it restricts actions like printing, downloading and reusing the content of e- books on different devices.

Full Text Databases: The Electronic databases which provide access to the full text of the articles published in journals are known as full text databases.

Metadata: It is the structured information which describes data item or a collection of data items. It is data about data.

Portable Document Format (PDF): It is a file format developed by Adobe systems in 1993. It preserves attributes of the source document no matter which application, platform and hardware type was originally used to create it.

Smart phones: These are mobile phone with advanced software which provide facilities for connecting to the Internet and browsing websites.

SUGGESTED ACTIVITIES

1. Visit the website of the 10 journals and capture the screenshot of their homepages.

2. Visit the site of Current Contents Connect and capture the screenshot of its homepage. Write the main subjects covered in it.

3. Visit the website of any full text database. Write the name of the database, its URL, content and coverage.

4. Visit the website of any bibliographic database .Write the name of the database, its URL, content and coverage.

5. Visit the website of any publisher of e-books. Write about its collection, and coverage of e- books.

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9

ORGANIZATION OF LIBRARY MATERIAL: CONCEPT, NEED AND PURPOSE

9.1 INTRODUCTION

A library is not just a place or a building filled with books and other reading material. It is also a place where information sources are organized so that users can find the information that they need. When information sources are organized carefully and access to textual and non-textual material in paper-based and digital collections is easy, maximum utilization by users can be ensured.

In this lesson, we will begin by categorizing the library material. You will then be told about the need and purpose of organizing library material. For retrieval of material, it is necessary to organize various categories of library material. The steps of organizing these materials will also be enumerated.

9.2 OBJECTIVES

After studying this lesson, you will be able to

- explain the need and purpose of organizing library material;
- identify categories of library material;
- list out various types of print and non-print library material;
- explain their value in a library;
- identify electronic library material;
- describe their use and functions in a library; and
- enumerate the steps in organizing the library material.

9.3 LIBRARY MATERIAL

The library materials are records of human knowledge on paper or in electronic form for easy handling, storage, use and preservation. The information contained in the documents represents the thought content and knowledge. Documents are available in a variety of print and non-print forms. In order to develop the collection of a library, we must know about the categories of reading material, their types, forms, uses and characteristics.

Before we learn about the various types of library material, it is important to know the functions of a library in the modern society. A library is a collection of information, information sources, resources and services. This collection is maintained by the library for different types of users. The primary goal and job of a library is to aid its users in their quest for knowledge. Thus an excellent collection of documents is required for all library services to be rendered by a library. These may be available in a variety of forms which include both the print and the non-print material.

9.4 PRINT MATERIAL

Historically, libraries have depended on printed material to build collections. In a library we find a variety of printed material in various forms, which are:

- Books
- Periodicals
- Newspapers
- Reference books
- Dissertations and theses
- Standards
- Patents
- Maps
- Reports

Let us now study in detail about books, periodicals, newspapers and reference books. The non-print material and other material will be covered in the respective subsequent sections.

INTEXT QUESTIONS 9.1

1. What is the purpose of organizing library material?
2. List out the various forms of printed material available in libraries.

9.4.1 Books

A book is defined as a written or printed literary work, which is separately published and has an independent physical existence, with pages fastened along one side and encased between protective covers. In many libraries, books are referred to as monographs. Books constitute a major portion of any library's collection. Books usually supplement educational courses, business, foreign languages, history, literature, etc. It is vital to know the important features of a book.

The Oxford dictionary defines a book as 'a written or printed work consisting of pages glued or sewn together along one side and bound in covers'. A book thus is a document that normally deals with one particular subject having a continuous thought content. Most books have a protective cover. Books are reasonably inexpensive and convenient to store, transport and find knowledge and information. The book thus ranks as one of humanity's greatest inventions.

A book can be simple or composite, single-volumed or multiple-volumed, a general book, a text-book or a reference book. Besides this, books can be fiction or non-fiction books.

Example: *The Digital Scholar* by M. Weller
Treasure Island by Robert Louis Stevenson

Let us now learn what is a periodical.

9.4.2 Periodicals

A periodical is a publication with a distinctive title which appears at stated or regular intervals, without prior decision as to when the last issue shall appear. It contains articles, editorials, features, columns, stories or other writings by several contributors. Periodicals are important sources for current information on any subject.

UNESCO has defined a periodical as "a publication that constitutes one issue in a continuous series under the same title, published at regular or irregular intervals, over an indefinite period, individual issues in the series being numbered consecutively or each issue being dated." Periodicals are also referred

to as serials or journals. Besides these, magazines are the most typical type of periodicals.

The important aspect about the subject material of periodicals is that the latest or current information is provided to the readers through them. This library material, upon being received in the library, is displayed prominently to the readers and is replaced by the subsequent new issues.

Magazines are also like periodicals with each issue starting at page one but they are not academic or professional publications. These are not peer-reviewed

Examples: *Annals of Library and Information Studies; Human Resources Journal; The Journal of Anthropological Research,; Science*

INTEXT QUESTIONS 9.2

1. Describe a periodical.
2. Give examples of some periodicals available in your library.

9.4.3 Newspapers

A newspaper is a scheduled publication containing news of current events, informative articles, diverse features, editorials, and advertisements. It is usually printed on relatively inexpensive, low-grade papers known as the newsprint. It is a publication issued periodically, usually daily or weekly containing most recent news. Newspapers, thus, provide an excellent means of keeping oneself well-informed on current events. They also play a vital role in shaping of the public opinion.

Newspapers contain the world, national, state and local news. They carry editorials, opinion columns, featured articles and entertainment items. Very often, the news items or the stories are also supported by illustrations and photographs. A lot of newspapers bring out glossy and coloured supplements too in order to attract more readers.

Example: *The Times of India; The Hindustan Times*

Some newspapers have only web-based editions.

Example: *New York Times on the Web* www.nytimes.com; *Daily Pratap* http://dailypratap.com/

INTEXT QUESTION 9.3

1. What kind of information is available in newspapers ?

9.5 NON-PRINT MATERIAL

Non-print material can be defined as any material available in form other than printed material. These are rapidly becoming important information and learning resource materials for the modern libraries. Non-print materials differ from printed materials in several ways. One of the chief differences is that a machine must serve as a mediator between the information and the user of non-print material.

The non-print materials are available in two categories, namely, the audiovisual materials and the electronic materials.

9.5.1 Audio-visual materials

Audio-visual material is a generic term to describe information content held in storage and transmission media formats that use images and sounds rather than or sometimes in addition to, textual matter.

These materials, also called instructional media materials, are educational aids that work primarily through the senses, especially hearing and seeing. These materials include:

- Audio- cassettes
- Videotapes
- Motion picture films
- Slides
- Microforms
- CD-ROMs
- DVDs
- Photographs

The libraries possessing these materials also have the equipment involved in using them, such as motion-picture projectors, television sets, record and tape players and overhead projectors.

INTEXT QUESTION 9.4

1. Distinguish between print and non-print materials.

9.5.2 Electronic materials/resources

Computers and related electronic resources have come to play a central role in modern libraries. Electronic resources are of prime significance here. Electronic resources, referred to as e-resources, have added value to the libraries for offering better services to the users. Electronic resource can be defined as any library material that is made available electronically. These are thus those library resources which include documents in electronic or e-format that can be accessed locally or via the Internet globally. Many reference books are also available in electronic format.

Users are provided access to various e-resources which are e-books, e-journals, e-databases, e-magazines, e-images, e-audio, digital library projects, electronic exhibitions, e-newsletters, e-conference proceedings, etc. Many of the electronic resources are available free of cost to anyone over the Internet but some are commercial resources and are priced.

Information and communication technology is one of the important aspects of today's world. It has changed the society into information society and is now the way of life. This change is also reflected in the modern libraries.

Electronic resources are e-books, e-journals and e-databases.

Examples:

Treasure Island by Robert Louis Stevenson, a free e-book can be downloaded from http://www.feedbooks.com

Oxford Advanced Learner's Dictionary, e-book edition is the popular e-book edition of the Oxford Dictionary available at http://www.mobipocket.com Annals of Library and Information Studies, (quarterly) access via NISCAIR website http://www.niscair.res.in

Blackwell Scientific Journals – http://blacksci.co.uk/

PubMed – http://www.ncbi.nlm.gov/PubMed/

UNESCO Social Science Database – http://www.unesco.org/most/dare.htm

INIS Database - http://www.iaea.org/inis/database/inis_database.htm

INTEXT QUESTIONS 9.5

1. Define an electronic resource.
2. Give two examples of e-resources.

9.6 OTHER MATERIAL

We have learnt about various forms of library material in the previous sections. However, besides the various print and non-print material, already discussed, there are some more types of library materials you should know about. These include the standards, patents, pamphlets, reports, dissertations and theses, and maps and charts, etc. These materials are usually collected by libraries of scientific and technological organizations. The dissertations and theses are collected by university libraries.

Examples:

Standard - *ISO 2709: Standard for Bibliographic Record Formats*

Patent - *A method of producing ZP1 protein*

Dissertation - *SMART Materials and Structures: a survey of published literature, a dissertation submitted for award of Associateship in Information Science, INSDOC (NISCAIR)*

Atlas - *Oxford Reference Atlas for India and the World – published by Oxford University Press*

9.7 NEED TO ORGANIZE LIBRARY MATERIAL

A library can have plenty of reading material of various kinds. But just setting up a library is of no use if users cannot easily and readily access the material it contains. It has to be ensured that library resources and users are brought together. The need for organizing library material is to:

- maximize search capabilities for users;
- display the available resources and;
- minimize physical, intellectual and time barriers.

The material has to be organized in such a way that it becomes easier for library staff and the library users to find information they require.

9.8 PURPOSE OF ORGANIZING LIBRARY MATERIAL

It is important to organize library materials for easier location of the same thus saving the time of the users in locating documents. Subject access in the case of certain subject material also becomes easy and the place looks tidy. The purpose of organizing library material is to:

- ensure location of library material;
- facilitate easy accessibility of the material;
- enhance the effective utilization of the material; and
- attract users to the library.

9.9 STEPS IN ORGANIZING THE LIBRARY MATERIAL

The main goal of every library is to share information with the user community. It is sometimes easy to get involved up in the details of organizing a library that we lose sight of that goal. How we organize the books is not as important as the end result. An organizing system is only successful if it makes it easier for library staff and the library users to find desired information as and when required.

The steps of organizing library materials are:

a) Acquisition

To start organizing a library, a librarian must know what he or she needs. To do this, the first step is to identify collection requirements.

b) Collection development

Once a librarian has assessed the collection requirements, the next step is to begin acquiring those items. In this step, it is imperative that a librarian knows the best ways in which to acquire necessary items. Various steps involved are:

- Select materials based on the availability of funds.
- Place orders for purchase
- Acquire the material
- Maintain the records of newly acquired material

c) Technical processing of library material

Libraries adopt various methods to organize their material. As most of the libraries have open access facility for their users, the following steps are taken to organize library material:

- Process new material
  - o Classification of material
  - o Cataloguing of material
- Physical processing (stamping, pasting, labelling, etc.)
- Display the resources
- Storing and shelving

Besides the above, the library material must be maintained if it has to stay effective and relevant to the changing technologies. For this, librarians must adopt various procedures related to maintenance in order to keep the collection current and functional. This requires:

- Care of library resources
- Shelf maintenance
- Maintaining records of collection development and use
- Identifying the lost and damaged materials
- Housekeeping activities for the collection

The other details related to organizing and maintaining library material will be covered in Lesson 10 of this module.

INTEXT QUESTION 9.6

1. Enumerate the steps in organizing the library material.

WHAT YOU HAVE LEARNT

- Users rely on libraries which provide information in support of teaching, learning, research and knowledge dissemination, which is a fundamental basis for the existence of libraries.
- The purpose of organizing the materials in the library is to make it easier for the librarian and the users to find the desired information.
- In order to be effective, libraries have to acquire suitable material needed by their users. For this reason, it is essential that the librarians should be aware of various types and forms of library materials.

- Library materials are available in various forms like the print and the non-print material.
- The print material includes the books, periodicals, newspapers and reference books.
- The non-print material includes the audio-visual materials and electronic materials.
- Other material required by special libraries are: standards, patents, pamphlets, reports, dissertations and theses, and maps and charts, etc.
- Electronic resources, referred to as e-resources, have added value to the libraries for offering better services to the users. For example, an e-book is an electronic book, which can be read digitally on the computer screen or on devices called e-book readers.
- The above-mentioned library materials have to be acquired, processed and made available for use by the library users. To serve the needs of the users, records have to be maintained for all the material.
- The steps in organizing library material are necessary to access, acquire, process and to maintain the collection.

TERMINAL QUESTIONS

1. List out the various materials required in libraries.
2. Discuss the main features of scholarly periodicals.
3. Explain the importance of periodicals as an electronic resource in a scientific library.
4. Give an overview of different kinds of electronic material available in modern libraries.

ANSWERS TO IN TEXT QUESTIONS

9.1

1. The purposes of organizing library material are to:
   - ensure location of library material,
   - facilitate easy accessibility to the material,

- enhance the effective utilization of the material, and
- attract users to the library.

2. In a library, we find a variety of printed material in various forms like books, periodicals, newspapers, reference books, etc.

9.2

1. A periodical is a publication with a distinctive title which appears at stated or regular intervals, without prior decision as to when the last issue shall appear. It contains articles, editorials, features, columns, stories or other writings, by several contributors.

2. *Annals of Library and Information Studies, Human Resources Journal, The Journal of Anthropological Research, Science*

9.3

1. Newspapers contain the world, national, state and local news. They carry editorials, opinion columns, featured articles and entertainment items.

9.4

1. Print materials are items such as books, pamphlets, newspapers and periodicals. Non-print material usually refers to electronic materials.

9.5

1. Electronic resources can be defined as any library material that is made available electronically.

2. *Music Educators Journal* , bimonthly access via JSTOR and *Annals of Library and Information Studies*, (quarterly) access via NISCAIR website http://www.niscair.res.in

9.6

1. The steps in organizing the library material are:

   a) Acquisition

   b) Collection development

   c) Technical processing of library material

GLOSSARY

Dictionary - Provides information about words: their meanings, derivations, spellings, pronunciations, syllabification, and usage.

Dissertation - A formal and lengthy written discourse or treatise, required by universities in partial fulfilment of requirements for a Master's Degree or M.Phil.

E-Books - An abbreviated term for electronic book. A book that can be accessed electronically via the Internet.

E-Journal - An abbreviated term for electronic journal. A periodical that is available in an electronic format.

Encyclopaedia - Gives an overview of a topic, including definition, description, background, and bibliographical references.

Hard copy - Printed material, as opposed to information in microform or electronic or digital format.

Journal - A periodical which contains scholarly articles, such as reports of original research, published by a professional group or non-commercial publisher.

Magazine - A periodical for general reading, quick information, or entertainment, frequently containing advertising for consumer products.

Microforms - Greatly-reduced photographic reproductions of printed material on film ("microfilm") or film cards ("microfiche"), that can be viewed and photocopied using a microform reader/printer.

Newspaper - A serial publication printed and distributed daily or weekly containing news, opinions, advertising, and other items of general interest. Some of the newspapers are in both print and online formats.

Reference Books - Special books that are not circulated so that they are always available inside the Library for use in answering specific questions. Encyclopaedias and dictionaries are two of the most well-known types of reference books.

SUGGESTED ACTIVITY

1. Visit any library in your locality. Identify and list out categories of print library material available there.

WEBSITES

http://en.wikipedia.org/wiki/Library

http://www.unesco.org/education/aladin/paldin/pdf/course02/Lesson _16.pdf

http://infolit.bibliotech.us/wiki/tiki-index.php?page_ref_id=15

www.calstatela.edu/library/guides/terms4.htm

http://lili.org/forlibs/ce/sable/course4/sec4-classification-11.htm

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10

PROCESSING OF LIBRARY MATERIAL: CLASSIFICATION AND CATALOGUING

10.1 INTRODUCTION

Library materials are acquired to support teaching/learning processes and to provide information to users when needed. It thus becomes necessary that the material be properly organized in a systematic way so that access to these materials is unhindered. Every library has a technical services department/division. This department handles classification, cataloging, physical processing, preservation, and maintenance of the materials in the library. The activity of organizing these materials is referred to as technical processing which includes classification and cataloguing.

Classification of documents is in accordance with a selected scheme of classification. Cataloguing is as per the chosen cataloguing code and the internal form of catalogue as decided for the library. With the introduction of computers, technical processing is also being automated in libraries.

10.2 OBJECTIVES

After studying this lesson you will be able to –

- explain the need for technical processing of library material;
- explain the steps in technical processing, viz., classification; cataloguing; physical processing; shelving and filing;
- state the purpose of library classification;
- describe the need for notation in library classification;

- list the various schemes of library classification available in libraries for organizing the library collection;
- explain the concept of main classes in DDC and CC;
- identify class number, book number, call number and collection number;
- explain the use of cataloguing of library material;
- describe a library catalogue and cataloguing;
- identify the physical and inner forms of a library catalogue;
- explain Dictionary Catalogue and Classified Catalogue; and
- list the popular cataloguing codes

10.3 TECHNICAL PROCESSING

The Technical Processing Section plays a key role in carrying out the functions of any library. The journey of every document in the library to reach its readers starts from the acquisition section. It is the acquistion section that acquires the documents and it is the technical section that prepares these for use by the users. The technical section, therefore, acts as a bridge between the acquisition of documents and their circulation.

This section attends to all technical activities by the professional/technical staff of the library. The activities done here are chiefly classification; cataloguing; physical processing; shelving; and filing of library material.

10.3.1 Need for Technical Processing

Library materials go through the process of technical processing so that they can be located, used, and returned to the library at their requisite place. The need for technical processing has been brought about by a number of factors, which are:

- tremendous growth of information resulting in production of a variety of library materials,
- necessity of categorization of the universe of knowledge,
- arranging materials in such a way that subject specialization is maintained,
- systematic arrangement of documents to facilitate easy storage and retrieval, and satisfaction of users' needs.

In addition to the above, several tools have been developed for technical processing of documents, especially for arrangement and management of collection. These are the vocabulary control devices like the classification schemes, thesauri, cataloguing codes, subject heading lists, etc. These tools help in preparation of modern information services and products.

10.3.2 Basic Steps in Technical Processing

The steps involved in technical processing vary from one library to another. The processing steps usually vary by type of library. Within a library, different types of material may be processed in different ways. The basic steps of technical processing of library material are as follows:

a) Classification

b) Cataloguing

c) Preparation of Shelf list

d) Labeling the documents

In this Lesson, we will apprise you with classification, cataloguing and preparation of the shelf list.

INTEXT QUESTIONS 10.1

1. State the need for technical processing of library material.
2. List the steps involved in technical processing of library material.

10.4 LIBRARY CLASSIFICATION

Library materials are classified for several reasons. One reason is that it is difficult to find library material unless each item has a place to which it belongs. Secondly, it should be located if it is in the library. Another reason is that classification makes a collection browse-able by placing items on similar subjects together. Also, with a class number on each library item, staff can easily return the material after use to the shelves at its right location. This makes the material available for the next user. The main function of every library thus is to provide reading material to users.

Library classification is defined as "grouping of documents having the same or similar subject content. It is a system of arrangement adopted by libraries to enable users to find their materials quickly and easily." All the books, irrespective of their size, no matter when written, are naturally grouped together when they belong to the same subject. Therefore, library classification by subject is essential for all library material.

10.4.1 Purpose of Library Classification

The main purpose of library classification is to facilitate use of reading material. It is, therefore essential that library classification should make the documents

readily available to the users whenever required. This is due to the fact that classification helps to arrange documents in the most convenient order.

Various purposes of library classification are to:

a) arrange library material in a manner helpful to the users and the library staff;

b) replace the materials in their proper place on the shelves after use by the users;

c) facilitate removal of unwanted material from the shelves;

d) ensure that there is scope to place newly acquired material on the shelves in their proper place;

e) place material on the shelves as indicated/shown by the library catalogue; and

f) provide every document an individual class number, so it has an individual number.

The two main functions of library classification are shelf arrangement and notation. We will discuss shelf arrangement in the next lesson.

10.4.2 Notation

Notation is defined as a system of numbers used to represent the classes (subjects) in a library classification scheme. It is essential in every scheme of classification as it serves as a symbol in place of a term. As notation makes up the class number, it can be described as the standard abbreviation of the classification scheme. The system of providing notation is referred to as notational system. The notational system consists of:

- Arabic numerals
- Roman letters, both small and caps
- Punctuation marks
- Mathematical symbols

These symbols may, however, vary from one classification scheme to another.

A good notation should have the following qualities:

a) Simplicity- it should be simple, easy to read, write and remember.

b) Brevity - it should be brief.

c) Pronounceable - it should be possible to pronounce it easily.

Example

Subject	*Notation in DDC*	*Notation in CC*
Education	370	T
Chemistry	540	E
Library Science	020	2
History	900	V

INTEXT QUESTIONS 10.2

1. What is the chief purpose of library classification?
2. Write a brief note on the role of notation in library classification.

10.4.3 Call Number

In addition to the notation from the classification scheme, library items should also give an indication of author's surname . This is made up of letters or letters and numbers that indicate the author's last name. Some libraries may also add a title indicator, date of publication, and/or a copy number. Further, a code indicating particular collection type like 'R' for reference material, 'D' for books related to the documentation etc. may also be added. Besides this, another number called copy number is also added when there are more than one copy of a particular book for shelving. All of these elements together form what is called a Call Number.

The purpose of the call number is to provide the address for an item in the library. This address is where the staff will be sure to shelve the item, and where the user can look for the item. This address also allows a user to browse the similar collection together on any given topic. The idea of creating this address, or call number, for each item in the library is that each item can only have one address. It becomes the cataloguer's job to determine the specific focus of the item being catalogued, and group various materials dealing with the same topic together, creating an organized, browse-able collection.

The call number consists of class number, book number, collection number and copy number if any. Thus,

Call Number = Class Number + Book Number + Collection Number+ Copy number (if any)

Examples

A book entitled *Principles of Physics* by P. V. Naik will have the following call number according to Dewey Decimal Classification.

D
530
NAI

Here, D = Collection Number for main collection for lending to users

530 = Class Number for Physics

NAI = Book Number from first three letters of the author's surname

Further, if there are 2 copies of the same book, additional information for copy number 1 or 2 is given. For example for the second copy, the above call number will appear as D530NAI; 2

A book entitled *Elementary education* by M. K. Sengupta published in 1972 will have the following call number according to Colon Classification.

T15 N72 TD

Here, T15	=	Class Number for Elementary Education
N72	=	Book Number according to year of publication, i.e., 1972
TD	=	Collection Number, indicating that book belongs to Education Department (as per a table given in Colon Classification Schedules)

10.4.4 Schemes of Library Classification

There are several classification schemes in use worldwide. Popular ones among them are:

- BLISS Bibliographic Classification (BC)
- Colon Classification (CC)
- Dewey Decimal Classification (DDC)
- Library of Congress Classification (LC)
- Universal Decimal Classification (UDC)

Of the above, two classification systems are most commonly used in Indian libraries. These are : Dewey Decimal Classification (DDC) Scheme, and the Colon Classification Scheme (CC). DDC is based on a numerical breakup of all topics, and the Colon Classification Scheme is made up of an alphanumerical subject organization.

10.4.4.1 Dewey Decimal Classification (DDC)

This classification scheme, designed by Melville Dewey in 1876, is used by

most of the libraries all over the world. It is an enumerative scheme of classification as most of the subjects can be assigned numbers directly from the schedules. Dewey divided the universe of knowledge into ten main classes with further subdivisions accompanied by decimal notation. This notation repeats patterns and develops subjects with parallel construction. It also repeats standard subdivisions so that it is easy to browse the shelves in a logical manner.

Arrangement of classes in DDC is based on disciplines rather than subjects. The main features of DDC are:

- use of pure Arabic numerals in notation;
- use of decimal to specify subject terms that is specific;
- scheme is compact and available in four volumes.
- availability of mnemonic devices that facilitates easy recall of classification number;
- DDC employs three minimum digits to the left of the decimal; and
- availability of relative index for the diverse material in the schedule.

Main Classes of DDC

DDC arranges the universe of knowledge into 10 broad classes. Each main class is divided into 10 divisions, and each division is further divided into 10 subdivisions until all the subject terms have been specified.The first summary contains the 10 main classes. The first digit in each three digit number represents the main class.

000	Generalities
100	Philosophy & Psychology
200	Religion
300	Social Sciences
400	Language
500	Natural Sciences and Mathematics
600	Technology (Applied sciences)
700	The Arts
800	Literature & Rhetoric
900	Geography & History

Example

500 represents Natural Sciences and Mathematics.

The second summary contains the hundred divisions. The second digit in each three-digit number indicates the division.

Example

500 is used for general works on the Sciences, 510 for Mathematics, 520 for Astronomy, 530 for Physics.

The third summary contains the thousand sections. The third digit in each three-digit number indicates the section.

Example

530 is used for general works on Physics, 531 for Classical Mechanics, 532 for Fluid Mechanics, 533 for Gas Mechanics.

A decimal point follows the third digit in a class number, after which division by ten continues to the specific degree of classification needed.

Examples

Book Selection in Public Libraries	025.21
Types of Book Binding	686.3

In addition to numbers given in the schedules, seven tables can also be used for number building. These tables are given below:

Table-1:	Standard Subdivisions
Table-2:	Geographic Areas, Historical Periods, Persons
Table-3:	Subdivisions for the Arts, for Individual Literatures, for Specific Literary Forms
Table-3A:	Subdivisions for Works by or about Individual Authors
Table-3B:	Subdivisions for Works by or about More than One Author
Table-3C:	Notation to be Added Where Instructed in Table 3B, e.g., 700.4, 791.4, 808-809
Table-4:	Subdivisions of Individual Languages and Language Families
Table-5:	Racial, Ethnic and National Groups
Table-6:	Languages
Table 7:	Groups of Persons

10.4.4.2 Colon Classification (CC)

Colon Classification scheme was designed in 1933 by Dr. S R Ranganathan. CC is an analytico-synthetic scheme. The schedule of CC consists of certain standard unit schedules. By combining the numbers in different unit schedules, class numbers can be constructed for any subject. The universe of knowledge is divided on the basis of subjects known as Main Classes.

The first edition of the scheme was brought out in 1933 and the seventh edition is the latest edition. But the 7th edition is not much in use. The 6th edition is widely used. For this reason, we will discuss here the 6th edition of CC, which was first published in 1960 and revised in 1963.

Main Classes of CC

The Main Classes of CC 6th revised edition are presented below:

Code	Subject	Code	Subject
z	Generalia	LX	Pharmacognosy
1	Universe of Knowledge	M	Useful Arts
2	Library Science	Δ	Spiritual Experience and Mysticism
3	Book Science	MZ	Humanities and Social Sciences
4	Journalism	MZA	Humanities
A	Natural Sciences	N	Fine Arts
AZ	Mathematical Sciences	NX	Literature and Language
B	Mathematics	O	Literature
BZ	Physical Sciences	P	Linguistics
C	Physics	Q	Religion
D	Engineering	R	Philosophy
E	Chemistry	S	Psychology
F	Technology	Σ	Social Sciences
G	Biology	T	Education
H	Geology	U	Geography
HX	Mining	V	History
I	Botany	W	Political Science
J	Agriculture	X	Economics
K	Zoology	Y	Sociology
KX	Animal Husbandry	YX	Social Work
L	Medicine	Z	Law

Examples

Library Science	2
Public Library	22
Engineering drawing	D: 4

INTEXT QUESTIONS 10.3

1. What does a call number consist of?

2. Name the two most popular library classification schemes used in India.

10.5 LIBRARY CATALOGUES

Let us now describe what a library catalogue is. In order to provide access to the holdings of a library, an index or list of available materials in the collection must be maintained. This principal index or list of available materials is called a catalogue. A library catalogue can, therefore, be defined as,“ a list of books, maps, stamps, sound recordings or any reading materials that constitute a library collection. Its main purpose is to record, describe and index the holdings of any library collection.”

A library catalogue thus lists documents forming the total holdings or a part of the holdings of a library. The use of the resources of a library depends to a large degree on the quality of its catalogue. Therefore, it is essential that the catalogue should be prepared with care and it should be maintained up-to-date. It helps the users to use the library effectively and efficiently.

In other words, a library catalogue is a record of the holdings of a library. In order to meet the requirements of users, it consists of various unit records. These records are called entries. Each entry is designed for satisfying a particular approach of the user. Entries are prepared according to a set of rules contained in a catalogue code which will be discussed in a later section of this Lesson.

In a library, the catalogue is a tool to:

- list out and describe according to a consistent plan, the print and non-print resources available in the library,
- direct users to similar materials,
- record the collection of the library,
- indicate the location of the resources, and
- assist users in obtaining the skills of information retrieval.

10.5.1 Uses of Library Cataloguing

The catalogue enables users to:

- Retrieve information efficiently,
- Increase understanding by students and staff of information retrieval systems,

- Plan, order, and check resources efficiently, and
- Develop information retrieval skills.

Library Catalogue and Cataloguing

The process of standardized classification and cataloguing results in the creation of a library catalogue. To create the catalogue, information on each book or item in the collection has to be collected, assigned, and recorded. Library cataloguing is therefore, the process of preparation of entries for the construction of a catalogue and preparing a bibliographic record that will become entries in a catalogue. If carried out manually, the catalogue entries are usually made on cards of 12.5 X 7.5 cm (3 x 5 in.) size.

Cataloguing work, thus, involves making of the necessary catalogue entries for a document. These entries may be of different types, each having its own specific function to perform. Each of the entries has to be prepared in accordance with the rules prescribed in the cataloguing code being followed by the library. The nature and content of each type of entry may be influenced by the particular form of catalogue. Cataloguing work involves the following steps:

- Preparation of the main entry
- Preparation of added entries
- Assignment of subject headings
- Preparation of reference entries, if any
- Writing the tracing on the main entry
- Preparing the shelf list card
- Checking of the catalogue cards by senior personnel
- Alphabetization of catalogues cards
- Filing of catalogue cards

The main entry in any catalogue is the entry with maximum information about the document being catalogued. All the other entries, i.e., the added entries and the reference entries are derived from the main entry. The assignment of the subject headings is also carried out after preparation of the main entry. Thus it is essential that the library personnel carrying out cataloguing should first prepare the main entry and then all the other added entries.

The added entries, as mentioned above, are to be derived from the main entry. The type and number of added entries required for a particular document varies. These are dependent on the type of document being catalogued. Many times, this also depends on the kind of library, its collection categories and the users of the

library. Wherever the unit card system is followed, the main entry can be duplicated and the information in the heading section is to be provided accordingly. The reference entries are also similarly prepared, these too are to be drawn from the main entry. Once all the added entries are complete, the tracing section can be prepared on the back of main entry card.

Assignment of subject headings is one of the chief activities of the technical processing section. The subject headings are usually assigned after preparation of the main entry card of a document. In many libraries, however, it is the responsibility of the personnel carrying out classification as classifiers who are usually the subject experts. In most libraries, subject headings are in the form of subject or class index entries. For assigning subject headings, the tools required are – the list of subject headings, bibliographies, classification schedules and thesauri. A separate added entry is required for each subject heading.

For the libraries having the practice of maintaining a shelf-list, the next step is preparing of shelf list cards. The shelf-list contains a card each for every volume and is arranged parallel to the arrangement of the documents in the library shelves. The shelf-list card is usually a duplicate of the main entry card or in libraries having the unit card system, one card can be placed in the shelf-list.

All the cards, along with the catalogued book, are usually submitted to the chief librarian or a senior professional specially designated for the purpose of scrutiny and checking. It is to ensure quality before books are sent for public use. After checking, if found to be without any errors, the documents may be sent for physical processing or display or directly to the shelves. The cards are to be alphabetized and then sent for filing in the main public catalogue.

10.5.2 Physical Forms of Library Catalogue

The library catalogue is available in many physical forms. A large number of catalogues have emerged so far as their physical appearance is concerned, for example, punch form, Rotadex, magnetic tape form, microfiche/microfilm form, book form, the sheaf form, the card form and now the electronic form. However, the book form, the sheaf form and the card form have registered long-lasting popularity.

Let us learn about some popular physical forms of the catalogue. But before that we must remember that the most popular form of the library catalogue is the card form. Some of the physical forms of catalogue are:

- Printed book catalogue
- Sheaf catalogue
- Card catalogue
- Shelf list

- Computerised Catalogue

Presently, the following physical forms are adopted by most of the libraries:

a) The Card Catalogue

As the catalogue has to be flexible, the card catalogue offers the best solution. Stiff paper cards of the dimension of 12.5 X 7.5 cm (3 x 5 in.) size and 0.25 mm thickness are used to prepare different catalogue entries. One card is used for every individual entry, main or the added entries. The card has a small hole in the lower middle part, so that each card can be inserted into a steel rod. The cards held together by the steel rod are arranged as per the desired sequence in wooden trays. The wooden trays are then placed in the pigeonholes of the catalogue cabinet. Each tray, on its outer face is marked by an appropriate label in alphabetical or classified sequence, the sequence in which the cards are arranged inside. Entries for newly -acquired books can be accommodated at proper places. It does not require frequent revisions. As such, it is economical to update. Moreover, it can be used by more than one user simultaneously; each user can use one or the other tray at a particular time. Its use is not subject to the availability of electricity. It is free from any machinery fault. However, such a catalogue is voluminous and lacks portability.

b) Shelf list

It is a catalogue of books and represents the order in which they stand on the shelves. Here each document title is represented by a card with all the bibliographical details as in the case of the catalogue card. The shelf list is very useful tool for the stocktaking process in the library, as for each document there is a card exactly depicting its location on the shelf.

c) Computerized Catalogue

The problems faced by the previous forms of catalogue have been overcome to a great extent by computers. With the advent of computers, the library activities ranging from acquisition to withdrawal of books from the library records can be automated. The same is the fate of cataloguing. The process not only helps in preparation of different catalogue entries, but also, in generation of book type or card type printouts. In addition, it has revolutionized the storage and retrieval mechanism of the libraries through its electronic version. As a matter of fact, OPAC (On-line Public Access Catalogues) are nowadays available in libraries.

A number of libraries in our country are computerizing their catalogue and the details of library material are displayed on the screen. Although rather expensive, it has the advantages of updation, no wear-tear in use and multiple storing of the catalogue. A copy of the whole catalogue can also be printed through a printer connected to the computer.

10.5.3 OPAC

An Online Public Access Catalogue (OPAC) is an online database of materials held by a library or group of libraries. An OPAC contains all the bibliographic information of a library and is in other words, a gateway to a library's collection. The OPAC is not only used on a stand-alone computer, but can also be put on the INTRA or INTERNET. This makes it possible for a library to extend its services not only to its users but also to the other interested persons of the locality, region, nation or the entire world. OPAC or computerized catalogue is very dynamic, in the sense, that it is highly flexible, easy and economical to maintain and capable of meeting almost every possible approach of the user. The searching capability is very fast and accurate.

10.5.4 Web OPAC

Web OPAC is an OPAC which is provided on the web and with the help of Internet a user can access it from anywhere. Whereas OPAC can facilitate the users' access to materials while in the library, Web OPAC has the advantage of being available world wide and is accessible any time. The status of a book may be known as the book is issued or on shelf, lost or transferred, etc. Here, an interface exists to provide access to the system in a manner that is complete, efficient and acceptable to the users.

As Web OPAC is accessible through Internet, it is possible to search it independently for the required material by author, keyword, title or year of a document. Complete bibliographic information is also available. In other words, all the features of an OPAC are present and there is also the facility to use hypertext links due to availability of Graphical User Interface.

10.5.5 Inner Forms of Library Catalogue

As mentioned earlier, a catalogue is a list of materials in a library or collection, the entries in the list being arranged by some systematic order. This order, or mode of arrangement, determines the inner form of the catalogue. There are many inner forms of catalogue as given below:

a) Author catalogue

b) Title catalogue

c) Dictionary catalogue

d) Keyword catalogue

e) Mixed alphabetic catalogue forms

f) Classified catalogue

g) Subject catalogue

h) Shelf list catalogue

Although there are many inner forms of catalogue, two most popular forms are dictionary and classified catalogue.

INTEXT QUESTIONS 10.4

1. What are the most popular physical forms of a library catalogue?

2. List out the uses of a library catalogue.

10.5.6 The Dictionary and Classified Catalogues

The provision of the author/title catalogue form in conjunction with the above-mentioned two of the subject catalogue forms has resulted in the production of these two famous inner forms of the catalogue.

The dictionary catalogue files its author/title heading, specific subject headings and connective references in one alphabetical sequence. The dictionary catalogue, an index to the library collection, is usually located in the main part of the library. This is called a dictionary catalogue because all the entries are arranged alphabetically like a dictionary.

Whereas, the classified catalogue has classified file of subject entries as the principle component, complemented by alphabetically arranged indexes of subject, authors, title, etc. These indexes may be arranged, in a single, or in separate, alphabetical sequence.

Of these two inner forms, the classified catalogue has a longer history in accordance with the classified order of knowledge. It is in fact, a legacy from the Britishers and is widely followed in India.

The dictionary catalogue came on the scene much later, and became very popular in the United States. In fact, it was C.A. Cutter, the famous personality in the field of cataloguing, who was responsible for the universal acceptance of this form of catalogue in America.

Both the forms of catalogue have been popular and it continues to be a topic of debate among the librarians on the merits and shortcomings of each of these forms. But both the forms have qualities which have been responsible for their wide popularity and use.

10.5.7 Cataloguing Codes

Cataloguing rules have been defined to allow for consistent cataloguing of vari-

ous library materials across several persons of a cataloging team and across time. Users can use them to clarify how to find an entry and how to interpret the data in an entry. Cataloguing rules prescribe:

- which information from a bibliographic item is to be included in the entry.
- how this information is presented on a catalogue entry or in a cataloguing record, and
- how the entries should be sorted in the catalogue.

The larger a collection, the more elaborate cataloguing rules are needed. Users cannot and do not want to examine hundreds of catalogue entries or even dozens of library items to find one item they need. Currently, most cataloging rules are similar to, or even based on, the *International Standard Bibliographic Description*(ISBD), a set of rules produced by the *International Federation of Library Associations and Institutions* (IFLA) to describe a wide range of library materials. These rules organize the bibliographic description of an item in the following areas:

1. Title and statement of responsibility (author or editor)
2. Edition
3. Material specific details (for example, the scale of a map)
4. Publication and distribution
5. Physical description (for example, number of pages)
6. Series
7. Notes, and
8. Standard Number (eg. ISBN)

The most commonly used set of cataloguing rules in the English speaking world are the *Anglo-American Cataloguing Rules*, 2nd Edition, or AACR2 for short. However, in India,a majority of libraries follow S.R. Ranganathan's *Classified Catalogue Code*.

INTEXT QUESTIONS 10.5

1. Distinguish between a dictionary catalogue and a classified catalogue.
2. List out the items of bibliographic description for library material as per ISBD rules.

WHAT YOU HAVE LEARNT

- The task of preparing documents for use includes both technical and physical processing. It is, therefore, both logical and economical for the Technical Processing Section to perform these two activities.
- The technical processing work consists of classification and cataloguing of documents. The functions of the Technical Processing Section are, firstly, classification of documents according to a standardized scheme of classification and cataloguing documents using a standard catalogue code. Secondly, preparation of the classified and catalogued documents for their physical location on the shelves of the library and maintaining the documents.
- Classification involves sorting of library documents on the basis of subjects, determining the specific subject of the documents and assigning the call number.
- Classification provides a system for organizing knowledge. Classification may be used to organize knowledge represented in any form, e.g., books, documents, electronic resources.
- Notation is the system of symbols used to represent the classes in a classification system. Library materials are often arranged by some sort of numeric or alpha-numeric system that corresponds to subject areas. This system is referred to as notation.
- Preparation of the cataloguing work include preparation of main and added entries for the documents, assigning subject headings and preparing shelf list.
- The most popular physical forms of the library catalogue are the Card catalogue, the Shelf list and the Computerised Catalogue.
- Due to developments in IT, from the traditional card catalogues, users have the facility of locating documents via OPAC and Internet. This facility has enabled anytime and anywhere access of material from the libraries.
- Two most popular inner forms of catalogue are the Dictionary catalogue and the Classified catalogue.

TERMINAL QUESTIONS

1. What is a call number ? Explain the need for assigning call numbers to library books.

Notes

2. Give an account of the main classes of the Dewey Decimal Classification.
3. What do you understand by cataloguing? Describe the purpose of a library catalogue in detail.
4. Describe the features of a classified catalogue.
5. Distinguish between an OPAC and a Web OPAC.

ANSWERS TO INTEXT QUESTIONS

10.1

1. The need for technical processing has been brought about by a number of factors, which are:
   a) Tremendous growth of information resulting in production of a variety of library materials,
   b) Necessity of categorization of the universe of knowledge,
   c) Arranging information in such a way that subject specialization is maintained,
   d) Systematic arrangement of documents facilitates easy storage and retrieval, and
   e) Satisfaction of users' needs.
2. The basic steps of technical processing, after acquiring of library materials are Classification and Cataloguing.

10.2

1. The chief purpose of library classification is to facilitate use of reading material. It is, therefore essential that library classification should make the documents readily available to the users whenever required by them.
2. Notation is defined as a system of numbers used to represent the classes (subjects) in a library classification scheme. It is essential in every scheme of classification as it serves as a symbol in place of a term. As notation makes up the class number, it can be described as the standard abbreviation of the classification scheme. The system of providing notation is referred to as notational system.

10.3

1. The call number consists of class number, book number, collection number and a copy number, if any

Thus,

Call Number = Class Number + Book Number + Collection Number+ Copy number (if any)

2. Two most commonly used classification schemes in Indian libraries are the Dewey Decimal Classification (DDC), and the Colon Classification Scheme (CC).

10.4

1. The most popular physical forms of a library catalogue are the Card catalogue, Shelf list and Computerized Catalogue.

2. The catalogue enables users to:

- retrieve information efficiently,
- increase understanding by students and staff of information retrieval systems,
- plan, order, and check resources efficiently, and
- develop information retrieval skills.

10.5

1. The dictionary catalogue files its author/title heading, specific subject headings and connective references in one alphabetical sequence. The dictionary catalogue, an index to the library collection, is usually located in the main part of the library. This is called a dictionary catalogue because all the entries are arranged alphabetically like a dictionary.

   On the other hand, classified catalogue has classified file of subject entries as the principle component, complemented by alphabetically arranged indexes of subject, authors, title, etc. These indexes may be arranged, in a single, or in separate, alphabetical sequences. The classified catalogue thus has two parts, a classified part and an alphabetic or dictionary part.

2. The bibliographic description of an item is in the following areas:

   a) Title and statement of responsibility (author or editor)

   b) Edition

   c) Material specific details (for example, the scale of a map)

   d) Publication and distribution

   e) Physical description (for example, number of pages)

   f) Series

g) Notes, and

h) Standard Number (e.g. ISBN)

GLOSSARY

Book Number: The combination of letters or letters and numbers that are used to indicate an individual work in the library. The book number may consist of several parts: an indicator for the author (i.e. author's last name); an indicator for the title (when an author has published more than one work in the same subject area); the date of publication (i.e. 1999); a copy number if there is more than one copy of this particular work in the collection (i.e. copy 2).

Call Number: This is the location or address of an item on the library shelves. The call number is made up of the notation (the number indicating the subject of the book) and the book number (indicating the author and information about that particular copy). There should be a unique call number for each individual item in a library collection. This can be done through the use of indicators for the title, date and copy number in the book number.

Classified Catalogue: A catalogue in which the entries are arranged in classified order of subjects, whether logically, in systematic order, exhibiting hierarchical relationship between subjects,

Dictionary Catalogue: A catalogue in which all the entries (author, title, subjects, series, etc.) and references are arranged in a single alphabet- like a dictionary.

ISBN : International Standard Book Number

Notation: The number, or letter and number combination, that is developed using the information given in a classification system (i.e., the schedules and tables of the DDC).

OPAC: Online Public Access Catalogue

Schedules: These are the part of classification system that list class numbers and sub-classes.

Tables: The DDC contains four tables of information that can be used in creating numbers from the schedules. These tables are needed to modify numbers from the schedules, creating more specific, topical numbers.

Web OPAC: An OPAC, which is provided on the web and can be accessed from anywhere with the help of Internet.

SUGGESTED ACTIVITIES

1. Go to a library and find out type of cataloguing and classification scheme being used there.
2. Search any five books in an Author catalogue of a library and note down Call Number of searched books. You may use either Print Catalogue or Online Catalogue.

WEBSITES

http://en.wikipedia.org/wiki/Library_classification

http://www.ibiblio.org/librariesfaq/sect5.htm

http://lili.org/forlibs/ce/able/course5/08purpose.htm

http://www.aijcrnet.com/journals/Vol_2_No_6_June_2012/15.pdf

11

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ARRANGEMENT AND MAINTENANCE OF LIBRARY MATERIAL

11.1 INTRODUCTION

In this lesson, we will discuss the issues related to organization and maintenance of library material. You will be told how materials have to be arranged on library shelves and how the arrangement of books differs from the arrangement of periodicals. The library material needs to be maintained on routine basis. Maintenance of library material involves kinds of stacking, shelf arrangement, cleaning, shelving, stock verification and weeding of unwanted material. Binding of documents will also be discussed as it is essential for care and repair of documents for their long life.

11.2 OBJECTIVES

After studying this lesson, you will be able to :–

- describe various ways to arrange books and periodicals ;
- identify various kinds of library stacks;
- explain the shelving order of books;
- explain arrangement of periodicals;
- describe the activities related to care of documents;
- highlight the importance of mending and binding of library books and periodicals;
- illustrate the role of stock verification and weeding of documents;

- justify the need for security of library documents; and
- give illustrations of library displays.

11.3 MAINTENANCE WORK

In every library, maintenance of library material involves continuous monitoring of the stack room, displaying of new material on the display racks and arrangement of the books and periodicals on the shelves after use. Besides these, the material has to be dusted and cleaned at periodic intervals. The periodicals, damaged and torn books have to be bound. The old and obsolete documents which are no longer in use have to be withdrawn from the stacks. This also includes physical care of the books, that is, their protection from sunlight, dust, insects, moisture and heat. The maintenance work is related to many sections of the library. For example, the processing section makes available new material all the time and there is a need to shelve these books within the already existing collection. This creates problems of shelving when books on the same subject are received in large numbers. These books have to be accommodated on the shelves without disturbing the order of arrangement of other collection. The circulation section too is involved. The users, continuously pick up books from the stacks, get them issued and eventually return them. Upon their return from users, these books have to be put back in their proper places on the stacks. Therefore, the work related to proper shelving, re-shelving and maintaining the collection is continuous in nature. Besides this, the work related to periodicals is separate from the rest of the library work. Effective service involving periodicals can be provided only by separating them from the rest of the library's collection.

The maintenance section performs a number of tasks on daily basis for concerned staff has to be responsible.

Maintenance work which consists of:

- shelving and re-shelving;
- keeping books and materials in order and maintaining cleanliness in the shelves and stack rooms;
- supervision of the collection;
- conservation and preservation of materials including repairs and binding;
- stocktaking and weeding; and
- security of library material

INTEXT QUESTION 11.1

1. List out the activities carried out by the maintenance section.

11.4 SHELVING AND STACKING

The documents after processing are to be properly shelved and displayed. The arrangement on the shelves should ensure that the most used books are in prominent places and not strictly as per the classification scheme. Oversized books are to be placed separately. The stacking of the documents should ensure that minimum space is wasted. All kinds of material which includes both book and non-book material has to be placed properly. Documents should be shelved on their allotted space on the shelves. There has to be proper lighting and sufficient provision for future growth of the library.

Duties of the stack management staff require an understanding of work flow, adherence to standards, and attention to details. It is the responsibility of staff belonging to stack management to make sure that:

- material is properly shelved,
- call numbers are in order, and
- support to new services and projects are planned and implemented on a timely basis.

11.4.1 Shelving Methods

Proper shelf management is considered as a tool for measuring performance, satisfaction and realization of set goals of any library. After introduction of open access in libraries, the role of the shelving has taken uppermost priority in libraries. Without accurate re-shelving of resources, effective library operation would be impossible for library staff and clients. It is an essential job which is time consuming and requires motivated staff to carry it out well. The shelving of the documents should be such that a user can find the required items without any inconvenience.

Fig 11.1: A wooden library book shelf

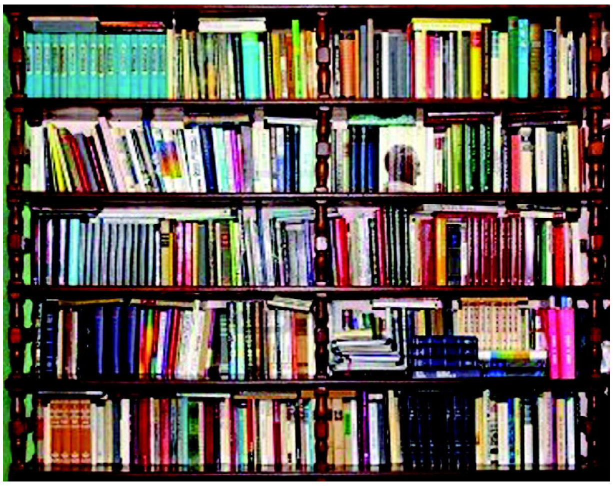

Fig 11.2: A library book shelf with books

Books must be shelved in a logical and structured manner otherwise locating specific books quickly becomes impossible. The most popular method of shelving is the arrangement in the classified manner as per the classification scheme used by the library. Some of the methods of shelf arrangement are discussed below:

a) Classified order

This is the best and most popular method of shelving. Here, all the books are arranged systematically as per the classification schedule. The user too finds it convenient. It is also found to be the most successful method in open access system. A majority of the libraries in the world use the Dewey Decimal System. This system of numerical classification allows libraries around the world to classify and arrange the material on the shelves according to the classification scheme. It is to be remembered here that other categories of material like periodicals, maps, atlases, pamphlets, standards, patents and non-book material are to be stored separately in the library.

b) Arrangement by broken order

It is the arrangement of books not strictly in classified sequence. Here, reference books, fiction, special collections, etc. are shelved separately.

c) Arrangement by special sequence

Here, books on the same subject are broken into three main categories-oversized, undersized and normal. They are placed in separate sequences in separate places. This is an economical method but books on the same subject do get separated.

d) Arrangement by accession numbers

Books may be arranged by their accession numbers in libraries with a small collection. But this system is very rarely followed. In open access libraries having plenty of users this system is not at all used.

e) Alphabetical by author/title

This is the simple way of arranging books in small libraries as it is easier to maintain small collections alphabetically either by author or by title. However, even in larger libraries, fiction can be arranged alphabetically by author and if an author has written a large number of books, then they are arranged by title, within the name of the author.

11.4.2 Stacking Methods

There are various kinds of stacking methods available which vary from library to library. The main consideration for any library should be to ensure that the maximum space is utilized and the users too should find it convenient and easy to move among the stacks. Shelves are either made of wood or steel. Depending on the available space, the authorities of a library may decide to use single-faced or double-faced units.

Some of the popular kinds of stacks are described below:

a) Fixed shelves with double rows

These are normal fixed shelves where material can be arranged in double rows.

b) Hinged stacks

Here two shelves are joined together with hinges on one side and one shelf is fixed while the other is mounted in front of the hinges.

c) Rolling stacks

These are metal stacks units mounted on ball bearing wheel placed side by side.

d) Compact storage

This system consists of units of three stacks, the centre row of fixed double-sided stacks at each side. This helps in increasing the capacity of the storage space.

e) Multi-tier stacks

This kind of stacking consists of stacks from floor to the roof and has become quite popular in very large libraries.

It is to be noted here that there should be adequate provision for both horizontal and vertical expansion. Besides this, the shelves should be durable and look attractive and functional. Proper guides should be provided on the shelves.

11.4.3 Book ends/support/rest

The most popular type of book support is the plate type book support. These are available in two heights, i.e., 6" and 9" and are selected according to the height of the books being shelved.

Fig. 11.3: Book ends supporting books

11.5 SHELF READING, BLOCKING AND SHELF RECTIFICATION

Two tasks to be carried out by the maintenance staff on a daily basis are shelf reading and blocking. Shelf reading is when one reads every call number on a shelf to ensure that it is in the proper order. Blocking is when each book is brought out to the end of the shelf so that the entire shelf is lined up with the edge of the shelf and all books are standing upright with a book support/end placed at the end of each shelf.

Books, after browsing by the users, are often misplaced on the shelves. Although users are strictly instructed not to replace the books on the shelves, they may still do so. It is a known fact that a wrongly-placed book is as good as lost. Thus, it is essential to restore the order of the books. This activity is referred to as shelf rectification.

INTEXT QUESTION 11.2

1. List out the various types of stacking systems available for libraries.

11.6 MAINTENANCE OF PERIODICALS

Many large libraries, especially university and research libraries maintain a separate periodicals division. The periodicals division is the place where the information needed can be found in journals, magazines, newspapers and other serial literature. Usually, the open shelf system is adopted in this section. Readers

have access to a wide range of magazines, newspapers and topics of relevant interest. Bound periodicals and back issues are arranged alphabetically by title in most of the libraries. Current issues are properly displayed on the display racks.

11.6.1 Work related to Periodicals

The work concerning periodicals is separated from the rest of the work related to other documents in the library. This is due to the fact that presently a majority of the library budget is spent on the subscriptions for periodicals. Also, present day researchers depend more on the literature contained in the periodicals rather than on the books. Therefore, the maintenance of periodicals requires greater skills on the part of library staff to handle the work. Work related to periodicals calls for attentiveness and complete dedication.

The work related to the periodicals division can be divided into different stages:

a) Receiving, recording and stamping the received issues of the periodicals.

b) Sending periodicals to the reading room for use. This includes arranging current periodicals for display or sending them to the shelves if not displayed.

c) Tracing the missing issues and maintaining correspondence with the publishers or vendor or whosoever the suppliers are.

d) Maintaining relevant records related to periodicals

e) Maintaining the periodicals display rooms by placing only the latest issues on the display racks and sending or keeping away the previous issues in proper places.

f) Shelf maintenance and shelving of bound and current periodicals

g) Collecting and collating different issues of periodicals for binding.

h) Carrying out preservation activities related to periodicals

i) Weeding, withdrawal, and disposal of periodicals

Of the various aspects of the periodicals work listed above, the stage mentioned at steps a), c), d) and i) are the duty of the technical personnel attached to the periodicals department. Whereas the steps at b), e), f) g) and h) completely relate to the maintenance work of the periodicals.

11.6.2 Access to the Periodical Collection

The collection in the periodical division is usually for use only inside the library. Photocopying of articles from latest issues of periodicals may be requested by users. However, back issues and bound volumes can be borrowed for using at home upon request after approval by the library-in-charge depending on the policy of the library.

INTEXT QUESTION 11.3

1. List out the various activities related to the maintenance work in the periodicals division of a library.

11.6.3 Display of Periodicals

The periodicals division supports the teaching and research mission of the university or college or research libraries by providing public assistance, access, storage, maintenance and management of periodical collection. For this purpose, libraries usually display periodicals for the benefit of their users. By actually seeing the displayed periodicals, users can be attracted towards them, thereby resulting in greater use of this category of library material.

Methods of display of periodicals are determined by a number of factors which include:

- Types of periodicals acquired
- Floor space available
- Layout of the library
- Types of users coming to the library

Many libraries have a separate reading room where periodicals are housed and displayed, whereas in some others, a general reading room accommodates all the reading material.

Fig. 11.4: Inclined type peridical display rack

For displaying periodicals, usually periodical display racks are used. These display racks are of three kinds:

a) Step type

b) Pigeon hole type

c) Inclined type

Let us learn more about each of the periodical display racks.

a) Step type

Periodicals are displayed stepwise in this kind of rack. Here each step is about 2 inches deep and 6 inches high. The rack is usually 3 to 4 feet long and there are 4 or 5 steps and on each step 4 to 5 periodicals can be displayed. A single sided rack can thus display about 25 periodicals and a double- sided rack can accommodate about 50 periodicals. Two single sided racks can also be placed back to back, if convenient. Usually, frequently used periodicals are displayed on the racks. One drawback in this type of rack is that there is no room for back issues of periodicals.

b) Pigeon hole type

This is the most popular type of display rack in libraries especially in the libraries subscribing to a large number of periodicals. This type of rack has two parts, one being a cupboard in the bottom and other pigeon holes at the top. The usual height and width are 7.5 feet by 6 feet. The depth is about one foot in the pigeon hole area and about 1.5 feet in the lower cupboard portion. The cupboard portion is for storing the back issues of the periodicals and the pigeon holes hold about 36 current periodicals. This type of display rack is very convenient and useful in the library but there is one disadvantage that the periodicals cannot be displayed properly.

c) Inclined Type

This type of display rack is considered to be the best type and is an improvement over the earlier pigeon-hole type of rack. This is a box type of rack with horizontal shelves, each covered with wooden planks with an inclination to the shelf plank. The shelves can be partitioned into pigeon holes, each hole being provided with a wooden support for the periodicals. Here the inclined plank provides a better way to display periodicals, with the back issues to be stored in the space behind the inclined plank. Display space for 25 to 30 periodicals can be provided in one rack.

11.6.4 Arrangement of Periodicals

There are four main ways in which periodicals may be arranged. These can be arranged alphabetically by:

1. Title
2. Language
3. Country, and
4. Subject

The periodicals can be arranged in different ways on the display racks. The best method, of course, is the alphabetical arrangement. In many large libraries, the arrangement of periodicals is subject-wise as alphabetical arrangement may create problems. Therefore, under broad subject headings, the periodicals are further arranged alphabetically. In small libraries, step type of display racks are very common and if the number of periodicals is quite small, it can be random without any definite arrangement.

The back issues of periodicals are usually arranged alphabetically in the shelves. This helps in finding an individual title easily and without any problem. Again, in some libraries, the back issues too may be arranged alphabetically under broad subject headings.

Actually, there is no rule or set way to arrange the periodical collection. The individual libraries can arrange their periodical collection as per the convenience of the users and their usefulness to the users. Many libraries shelve periodicals and newspapers by arranging them in order by date, with the most recent edition on the top, and the older issues below.

The arrangement of the bound issues too varies from library to library. In some cases the bound volumes of the periodicals are classified and placed along with books but in some libraries they are placed with loose issues of back volumes only.

The best way to arrange the latest issues of periodicals is to display them alphabetically under broad subject headings (that is, all issues of the current year) and to place all back volumes including the bound volumes on the shelves in proper alphabetical sequence.

INTEXT QUESTION 11.4

1. Which is the best way of arranging the periodicals in a library? Give reasons to support your answer.

11.7 MAINTENANCE OF NON-PRINT MATERIAL

You have already studied in the previous lessons that non-print materials are popular sources of information. Libraries acquire non-print material such as CDs, DVDs, Audio/Video tapes etc for their users because of the following reasons:

- Economy of space
- Portability and ease of transportation
- Making monotonous topics more interesting and easy to understand
- Condensation of texts for quick transmission, and saving time in learning
- Speed and ease in grasping and remembering information

In order to use the non-print materials, the following equipment is required in the libraries:

a) Computer systems and related equipment and furniture

b) Projectors – film projectors, overhead projectors, slide projectors

c) Audio and video equipment – CD players, Digital recorders, Digital video recorders, Tape recorders, Headphones, Speakers, etc.

d) Cameras and related equipment

e) Miscellaneous equipment – Screens, cords, adaptors, microphones and microphone stands, etc.

The above-mentioned equipment requires special care and regular maintenance all the time. Each category of non-book material is required to be placed in specially available racks, boxes or stands.

Fig. 11.5: CD-ROM Rack

Fig. 11. 6: A Micro-fiche reader

11.8 CARE, HANDLING AND REPAIR OF DOCUMENTS

We have already emphasized the importance of preservation and maintenance of the collection. The physical care and repair of resources is another important function to be carried out in every library all the time. The repeated careless handling and storage of a book can quickly transform a new book into a worn out or even an unusable one. Proper handling and storage in a stable, cool, clean, non-humid environment can prolong its life. The books and the other reading materials should be cleaned as frequently as possible and they should be kept safe from dust, moisture, insects and fungi.

The documents get damaged by dust/dirt, heat, dampness and insects. They have to be, therefore, cleaned with neat and clean soft dusters or cloth pieces. Vacuum cleaners can also be used to suck the dust from the books.

There are several kinds of insects which infest the books due to poor maintenance. Some common insects are silverfish, booklice and termite. Documents should be, therefore, stored in clean and dry places only, as many of the insects breed in dust and damp environments. Regular cleaning too keeps away the insects. If large scale infestation has taken place in the library, the documents may be sent for thorough disinfestations. These days, many firms specialize in this or the

National Archives of India may be approached for advice. Naphthalene balls in perforated boxes can be kept on the shelves to avoid infestation.

New books, soon after acquisition by the library, too should be physically prepared for tough handling by the users. The new books may be covered with plastic covers or the spine may be strengthened or bound if they are paperbacks.

The books should be handled properly to prolong their life and save them from deterioration and damage. Books should not be jammed into the shelves or book cases with too much of compactness so that it is impossible to pull them out without tearing their covers apart. Also books should not be piled one over the other and placed in the shelves with their spines facing outside.

The books should be examined occasionally and those requiring minor repairs should be immediately repaired. Those requiring major repair or binding should be immediately withdrawn from the shelves and sent to the bindery.

Photocopying is also one of the major causes of damage to library books. Some materials are difficult to handle for photocopying. Most importantly, care should be taken not to press down on the spine of books while photocopying. Extra care must be taken with large and heavy books. There are some types of materials which are too fragile to be photocopied at all.

While transporting books within the library, if more items are to be moved, a trolley should be used. Never overload a trolley rather make more trips, if required.

11.8.1 Book Care and Repair

Many times, we can carry out minor repairs for our library books to prolong their life. A few such items requiring attention are:

1. Individual pages which are falling out or loose.
2. Rips or tears on individual pages.
3. The hinges are ripped or the cover is coming off.
4. Corners of the cover (hardback book) are wearing thin and you can see the cardboard.
5. Corners of a paperback book are curled.
6. End papers are coming out.
7. The spine cover, the joint, etc. is torn or coming off.
8. One or more of the sections in the text-block are falling out.

In other words, minor repairs can be carried out on the books by simply using glue or scotch tape or invisible tape. These help to prolong their life span.

11.8.2 Preservation and Conservation

Preservation is concerned with maintaining or restoring access to artifacts, documents and records through the study, diagnosis, treatment and prevention of decay and damage. For preservation some environmental controls are necessary and are especially important to monitor some rare and special collections. Key environmental factors to watch include temperature, relative humidity, pests, pollutants, and light exposure. Preservation, however, should be distinguished from conservation which refers to the treatment and repair of individual items to slow decay or restore them to a usable state.

INTEXT QUESTION 11.5

1. Distinguish between preservation and conservation of library material.

11.9 LIBRARY BINDING

Library binding is the term used to describe the method of binding serials, and re-binding paperback or hardcover books for use within libraries. Library binding increases the durability of books, as well as makes the materials easier to use. If a library collection is extensively used, there is bound to be wear and tear of documents. Binding helps in strengthening the books and increases their life. It is a very important and routine activity of any library. Many large libraries have their own binderies but smaller ones have to get the books bound by professional binders.

The desirable characteristics of any library binding should be:

- The binding should be as conservative as possible, altering the text block minimally,
- The binding should be as non-damaging to the text block as possible and should not shorten its useful life,
- The bound volume should open easily to a 180° position to facilitate photocopying, and
- The bound volume should stay open when resting face up on a flat surface so that the reader has both hands free while using the book.

The binding process is highly technical and requires lots of skills. There are eight processes involved in binding work:

i. Collation

ii. Sewing

iii. Attaching covers

iv. Endpapers

v. Colouring edges

vi. Headbands

vii. Hollow backs

viii. Finishing

Different kinds of documents require different types of binding. Some documents like fiction, popular type of material, less costly documents require only light binding. Just strengthening the hinges with paper or cloth is sufficient. The large, oversized already bound books require just strengthening the hinges with paper and cloth. A majority of library books require proper binding. Referred to as library binding, these are of various kinds:

- Full leather binding
- Half-leather binding
- Full cloth binding
- Half cloth binding
- Perfect binding
- Plastic binding or cover

The main purpose of binding of documents in the library is to conserve documents for future use. The materials that are selected and sent for the binding are to be recorded properly. The binder has to be given instructions for binding process of the documents according to the types of documents given for binding. Binding work also includes receiving back the bound documents from the binder and sending the documents back to the shelves after proper checking of records and all paper work.

11.9.1 Binding of Periodicals

In university and research libraries, periodicals are a significant component of the library collection. Binding of periodicals is the best way to preserve the information. Periodicals are of two types – those of ephemeral value and those of permanent value. The retention period of periodicals of ephemeral value varies from library to library. Usually these are retained for a period of one year and then are weeded out and disposed as per the library's policy. Periodicals of permanent value are bound in leather with gold lettering and kept in the library for permanent use.

The binding of periodicals requires special care and attention. The binding process of periodicals is quite different from that of books and should be taken up

separately. Special care is required while sorting out the periodicals and checks should be made for complete volumes or sets. The surplus and duplicate issues should be removed.

The time and effort taken in the preparation of periodicals for binding and the making of necessary records can be greatly reduced if a permanent binding record is made of each periodical which needs to be regularly bound. This record helps in writing the binding slips and identifying the last volume bound. This will also avoid duplication in the binding of the volumes.

Proper care has to be taken while collating the periodical volumes before being sent for binding. Some necessary checks to be made are:

Title page

Bind the volume title page at the front of the issues to which it relates.

Covers

All covers should be removed if they do not contain any significant information but retain the front cover of each issue if contents are printed on them.

Index

Bind the volume index after the last issue of a bibliographical volume covered by it. When the index and the title page are separable, they should be placed separately but if both are inseparable, place only the index in its proper place and ignore the title page.

Advertisement

If there are full page advertisements in the last pages, remove them.

Supplements

If the supplements are in continuous pagination, bind them as they are but if they are separately paged, then put them all together in the end.

11.9.2 Missing Issues

If some issues are missing, try to locate them in the library, issue records or other libraries, etc. If such issues are located in any other library, a photocopy can be obtained and put in place of the missing issue. This practice is, of course, illegal unless the materials are within copyright. Still, if missing issues are not found, get the volume bound without them as the other available issues might be lost at a later date. If some pages are missing, indicate what pages are missing and bind a stub in their place for later insertion.

As periodical binding is usually conducted under contract via vendors, for most of the libraries, the above checks are to be carried out carefully.

INTEXT QUESTION 11.6

1. List out various kinds of binding required by books.

11.10 STOCK VERIFICATION

Stock verification is the systematic checking of the library's holdings for finding out missing items. It helps in restoration of misplaced or missing items, finding out torn or worn out items for repair or binding and provides an opportunity for cleaning and changing the arrangement of documents. Each library should conduct periodic inventories, that is, stock verification in order to have an up-to-date record of library holdings, concrete data on rate of loss and to assess strengths and weaknesses in the collection.

Presently, there are three techniques for library stock verification:

i. Manual– this is without help of computers and only with staff involvement.

ii. Semi-automated– partial use of computers.

iii. Automated - completely with the help of a Library Management Software.

Given below are some methods of stock verification to be carried out manually:

a) Shelf list method

Shelf list cards are used to verify the availability of documents on the shelves. After exhausting the tray the missing items are verified at all the sequences.

b) Accession Register Method

The availability of a document is duly marked against the accession number given in the accession register. After the end of the whole exercise, items left unmarked are listed and a further search for them is made.

c) Numerical Counting

Here all the books on the shelf and out on loan are physically counted and tallied with total number of books as per library's records.

The frequency of stock verification varies from library to library as it is a very time- consuming process

INTEXT QUESTION 11.7

1. List out the various techniques of stock verification in a library?

11.11 WEEDING

Weeding is a periodic or continual evaluation of resources intended to remove from the collection those items that are no longer useful. Weeding is the process of withdrawing documents from the shelves for discarding them permanently or transferring them to storage. It is an essential activity but unfortunately not much carried out in Indian libraries. It helps to allow space for new materials and also ensures easy access to the available collection.

Some of the criteria for weeding are physical condition of documents, unnecessary duplication, older or outdated editions, poor content, unused documents and unsuitable documents in the library. In the present times, if the library is automated, the computer system can aid in the weeding process.

While considering weeding in a library, it should be kept in mind that every library is different; every library has unique priorities and problems. The disposal of the weeded out materials is usually a policy matter for higher authorities of the library to decide. Stock verification helps in the weeding process of the library material. The weeded materials may be sold, given away or destroyed.

11.12 SECURITY OF LIBRARY MATERIAL

Libraries are not always safe and secure places. Theft and mutilation of books and loose issues of periodicals is a widespread problem and can be damaging to the library collection. The maintenance work thus also includes the security aspect of library material. As periodicals are not bound when received in the library, there are frequent cases of loss of periodicals. The library staff therefore has to be very careful and vigilant in the periodical display room and in the stacks containing back issues of periodicals.

The best way to provide security to the library material is to have a low priced photocopy service for the users in the library's reading room. This facility will help the users to immediately get a copy of the material found to be of use to them and save the library materials from getting lost or torn.

The most widespread response to theft and mutilation of library material across the world has been the installation of electronic security systems. But many of the libraries in India cannot afford the same due to paucity of funds.

11.12.1 Electronic Journals

The security issue of periodicals can be resolved to a great extent by replacing printed journals with their electronic version. With the increase in the popularity of the Internet for disseminating information and research, many periodical publications are making themselves available via the Internet in what is known as "electronic journals" or "e-journals". Some have printed equivalents, some

do not. Some are free, others are free with orders of paper copy. Some journals are "full text" (i.e., they provide as much text as the printed equivalent) whereas others provide only sample articles, table of contents, etc.

INTEXT QUESTIONS 11.8

1. Why is weeding of library material required ?
2. What is the best way to ensure security of periodicals in modern libraries ?

WHAT YOU HAVE LEARNT

- Maintenance of the library collection is an important activity of every library. It has a direct relation with the access of the documents to the users provided the whole thing is planned properly and managed efficiently.
- Stacks maintenance includes shelving and re-shelving of the library materials. Shelving refers to placing those materials in a proper place after they have been received after processing from the technical division. On the other hand, re-shelving involves placing the returned materials to the library after the use by patrons.
- The methods of shelf arrangement include stacking by classified order, broken order, accession number or by special sequence.
- Shelves are either made of wood or steel. Depending on the available space, the authorities of a library may decide to use single-faced or double-faced units. There are several kinds of stacks.
- Maintenance of periodicals requires special care. The periodicals work is continuous one as there is always a demand for old issues of periodicals by various readers. These types of library materials therefore, have to be kept in readiness for the users all the time with efficient staff in attendance.
- Periodicals are usually displayed in step-type or inclined or pigeon-hole type of display racks.
- Library binding increases the durability of books, and makes the materials easier to use.
- Stock verification is the systematic checking of the library's holdings for finding out missing items. It helps in restoration of misplaced or missing items and for finding out torn or worn out items for repair or binding.
- Weeding is a periodic or continual evaluation of resources intended to remove from the collection items that are no longer useful.

- The most widespread response to theft and mutilation of library material across the world has been the installation of electronic security systems.

TERMINAL QUESTIONS

1. Discuss the various methods of shelf arrangement.
2. Describe the best way of displaying the periodicals.
3. Write a detailed note on care, handling and repair of documents.
4. Give a brief overview of the binding process required for library books.

ANSWERS TO IN TEXT QUESTIONS

11.1

1. The activities of maintenance section are:
   - Shelving and re-shelving all the time
   - Maintaining order and cleanliness in the shelves and stack rooms
   - Supervision of the collection
   - Conservation and preservation of materials including repairs and binding
   - Stocktaking and weeding, and
   - Security of library material

11.2

1. The various types of stacking systems available in libraries are:
   - Double rows in fixed shelves
   - Hinged stacks
   - Rolling stacks
   - Multi-tier stacks
   - Compact shelves

11.3

1. The work in the periodicals division can be divided into different stages:

   a) Receiving, recording and stamping the received issues of the periodicals.

b) Sending periodicals to the reading room for use. This includes arranging current periodicals for display or sending them to the shelves if not displayed.

c) Tracing the missing issues and maintaining correspondence with the publishers or vendor or whosoever the suppliers are.

d) Maintaining all the relevant records related to periodicals

e) Maintaining the periodicals display rooms by placing only the latest issues on the display racks and sending or keeping away the previous issues in proper places.

f) Shelf maintenance and shelving of bound and current periodicals

g) Collecting and collating different issues of periodicals for binding.

h) Carrying out preservation activities related to periodicals

i) Weeding, withdrawal, and disposition of periodicals

11.4

The best way to arrange the latest periodicals is to display them alphabetically under broad subject headings (that is all issues of the current year) and to place all back volumes including the bound volumes on the shelves in proper alphabetical sequence. This is done because most of the library users prefer to browse through the latest issues of the Journals in their subject area of intrest, as soon as the journal arrives in the library. Old issues are used occasionally.

11.5

Preservation is concerned with maintaining or restoring access to artifacts, documents and records through the study, diagnosis, treatment and prevention of decay and damage. It should be distinguished from conservation which refers to the treatment and repair of individual items to slow decay or restore them to a usable state.

11.6

Various kinds of library binding is:

- Full leather binding
- Half-leather binding
- Full cloth binding
- Half cloth binding
- Perfect binding
- Plastic binding or cover

11.7

1. The three techniques for library stock verification are:

   a) Manual– this is without help of computers and only with staff involvement.

   b) Semi- partial use of computers.

   c) Automated - completely with the help of a library management software.

11.8

1. Weeding is a periodic or continual evaluation of resources intended to remove items that are no longer useful from the collection. Weeding is the process of withdrawing documents from the shelves for discarding permanently or transferring them to storage.

2. The security issue of periodicals can be resolved to a great extent by replacing printed journals with their electronic versions. With the increase in the popularity of the Internet for disseminating information and research, many periodical publications are making themselves available in electronic form via the Internet and are known as "electronic journals" or "e-journals".

GLOSSARY

Arrangement: Keeping the library material in a proper order.

Bindery: The department where loose periodical issues are sent to be bound into volumes.

Blocking: The task of lining the spines of the books up with the edge of the shelf.

Book Shelving: The act of putting books in their proper places on the shelves of a library.

Book Supports: Book supports are used to hold books upright and uniformly packed on a shelf.

Display: Putting the library material on shelves in such a way that the face of the document is visible to the user.

E-journal: Electronic journals are electronic forms of printed journals available via Internet.

Maintenance: Maintenance of library materials means continuous monitoring of the library's stack room, display of new books and arrangement of books on racks after use.

Multi-tier Stacks: Specially constructed steel shelving systems which are assembled as two or more tiers or shelving systems

Rack: The shelves used for display of periodicals are called racks.

Set: A set consists of keeping together all the issues of periodicals of the year in proper order.

Shifting: Relocating and reorganizing books to accommodate growth of the library collection

Stacks: The rows of books that house the library's collection

Stock verification: Checking of library's holdings for finding out missing items in the collection.

Weeding: The act of removing library books which are of no further use in the library.

SUGGESTED ACTIVITIES

1. Visit a library and arrange ten books on book shelves according to their Call Number.
2. Visit a library and arrange ten periodicals on display racks.

WEBSITES

http://library.ust.edu.ph/care.htm

http://en.wikipedia.org/wiki/Library

http://library.ryerson.ca/info/collections/policies/colldev/maint/

http://www.nyam.org/library/conservation-lab/collections-maintenance.html

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12

LIBRARY AND INFORMATION SERVICES FOR THE USERS

12.1 INTRODUCTION

Libraries, since ages, have stored materials that enable ideas, knowledge and experiences to be passed on from generation to generation. Libraries build collections tailored to the needs and goals of the organizations they serve. For example, academic libraries, build collections for students, teachers and researchers. This collection is systematically organized by the library for use by the users. The library collection serves as an important resource in education, work, and recreation of millions of people.

Earlier libraries were considered merely storehouses of knowledge, and the librarian a custodian of the collection. Users were expected to use the libraries on their own. Librarians concentrated more on the collection development and maintenance of the library rather than promoting its use.

Present day libraries are different. These are considered as educational and service institutions. Here librarians not only organize the collection, but provide assistance to library users in various ways, to support learning, interest and other vocation related activities. The assistance and services provided by the librarians can be broadly grouped as reference and information services. These services promote the use of library material, connect the users with the library resources and meet the information needs of the users.

In this lesson, you will learn about reference and information services offered by different types of libraries and need and importance of these services.

12.2 OBJECTIVES

After studying this lesson, you will be able to:-

- explain the need and importance of services offered by a library;
- list out the types of services offered by libraries, i.e. essential and desirable;
- describe various essential services;
- identify and discuss various desirable services; and
- elaborate upon the types of services offered by academic, special and public libraries.

12.3 NEED FOR INFORMATION

Information is crucial for all our activities. People need information for study, research, for pursuing their careers, health care, problem solving, recreation and lifelong learning. Everybody needs information for some purpose or the other. For example, students need information to supplement their textbook studies and for project work. Teachers need information for teaching and research. Professionals (doctors, engineers, consultants, etc.) need information to pursue their careers efficiently. Planners and policy makers need information to frame policies and take correct decisions. Researchers need information to keep up-to-date in their areas of research, to find out new areas of research and to solve any research problem. A large number of surveys have been conducted to find out information requirements of all categories of library users. These surveys in general, have identified four types of information needs of the users, such as i) Current Information Need, ii) Exhaustive Information Need, iii) Everyday Information Need, and iv) Catching up Information Need. It is further observed that information needs vary from person to person and a particular person may have different needs at different points of time.

When library users need information to keep themselves up-to-date with latest developments in their areas of interest on a regular basis, the need is known as **current information need.**

When a library user wants to have information on a particular topic as exhaustive as possible, the need is known as **exhaustive information need.** The researchers mainly have this type of information need when they start their research work.

Everyday information need is the need for a specific piece of information which users require, generally in their day-to-day activities. The need is

generally for factual information, which is normally available in standard reference books.

Catching-up Information need arises when a user, who is not conversant with a particular subject field, requires an account of overall development of that subject in a short and compact form.

12.4 LIBRARY SERVICES

To meet information needs of the users, libraries provide a range of services, which are broadly known as Reference and Information Services.

Reference services are concerned with direct personal assistance to the user seeking information. It covers direct services such as assistance to the user in the use of the library and its tools, assistance in searching and locating documents, ready reference and long range reference service, literature search and compilation of bibliography, helping in research etc and indirect services such as selection, organization and maintenance of library material for reference service, and other tasks of reference section such as keeping a record of reference queries, preparation of publicity material, evaluation of reference section etc.

Information services are provided in anticipation of various needs of the users of libraries. Current awareness services, indexing and abstracting service, etc. fall under information services. At times, these services are provided on demands from the users.

In literature the terms reference service and information service are used synonymously. Some experts refer them as two different kinds of services. The differences are enumerated in the Table 12.1 below:-

Sr. No.	Reference Service	Information Service
1	Traditional Service	Non-Traditional Service
2	Emphasis is on providing documents	Emphasis is on providing information
3	User is given the material or directed to locate the material	Attempt is made to provide exact information
4	Aim is to instruct the user	Less concerned with instructing user
5	Service provided on demand	Service provided in anticipation of need
6	Passive service: Library staff waits for the user to approach them and make a demand	Active service: Library staff provide service in anticipation to keep user well -informed

Table 12.1 : Reference service Vs Information Service

Reference and information services may also be broadly grouped into responsive information services and anticipatory information services. **Responsive information services,** *also known as* **passive information services**, are provided in response to the requests from the library users. **Anticipatory information services,** *also known as* **active information services** are provided in anticipation of the needs of the library users. About these services you will study in detail in lesson 13.

INTEXT QUESTIONS 12.1

1. Differentiate between reference service and information service.
2. Describe different types of information needs of library users.

12.5 BASIC OR ESSENTIAL SERVICES

Reference and information services offered by the libraries vary from library to library depending upon the type of library, its collection and staff strength. However, the **basic or essential services** rendered by all types of libraries irrespective of their collection and staff are:-

- Lending or Circulation Service
- Reservation of Documents
- Inter Library Loan
- Assistance in the Use of Library and Library Tools
- Reference Service
- Reader Advisory Service and
- Library Orientation

12.5.1 Lending or Circulation Service

This service is concerned with lending of books and other library material to the registered members of the library for a specific period of time. The service is also known as circulation service. For this purpose, each library follows a particular issue system for lending the books to the users and receiving them back from the users. All libraries viz., academic, public and special libraries offer this service. Though, rules and regulations of circulation service may differ from library to library. In some libraries issue and return of the books are handled manually. In some libraries this service is computerized.

12.5.2 Reservation of Documents

Reservation of the documents is one of the important services of the library. In this service, the library makes provision to reserve a book in the user's name, when the required book is already issued to someone else and is not available in the library. Whenever the book is returned by the borrower the library informs the user in whose name the book is reserved so that he/she can get the particular book issued for use.

12.5.3 Inter Library Loan

As you are aware, all libraries whether academic, public or special ones, build collections to fulfill the needs of their users as well as to support the mission of the parent institution to which they belong. However, no library even the largest one, can afford to have a sufficient collection to satisfy all the requirements of its users. At times, the user requires a document that is not available in its own library, but may be available in some other library. For this libraries usually have an agreement with other libraries to share their resources on reciprocal basis. Under this agreement the required document is then borrowed from other library on **Inter Library Loan** and is given to the user.

12.5.4 Assistance in the Use of Library and Library Tools

Assistance in the use of library collection and library tools such as catalogue including OPAC (Online Public Access Catalogue), reference books, etc. is provided to the users, who are not familiar with the library. This information is sought by the user, who visits the library for the first time. Such readers need directional guidance in the use of the library. They need to know the general layout of the library, location of the newspapers and magazines display racks, location of the textbooks and reference books, availability of card catalogue or computer terminal for searching the library collection, etc. Welcoming such users, personal assistance is provided in a number of ways. One such assistance is taking them on a quick tour of the library which includes visits to:

- The stack area where documents are systematically arranged with bay and shelf guides for browsing books and selecting any item required. Organization and arrangement of books is explained, using a typical example.
- To the reading rooms which include the general and periodicals reading rooms.
- To the reference room where standard reference books are stacked and displayed with guides. The reference counter, where a professional assistant is ready to guide or help.

- The circulation counter where the practice of borrowing and returning books for home reading is briefly explained.
- the racks at the entrance to the reference room, displaying the latest additions to the library with indications for reserving any item for borrowing is explained.
- The place where the card catalogue is located. Use of the catalogue is briefly demonstrated illustrating through a search for a document by its author, title or subject.
- The acquisition and processing sections, which are not generally open to users.
- The office of the Librarian where users can meet him/her for any advice, consultation or for any other purpose.

A guide/booklet, of the library which deals with its collection, facilities for use and services offered is also given to users for consultation.

To familiarize the students with the library and its services, the academic libraries, normally offer regular "user orientation" or "user education" programmes for the new entrants in each academic session. You will learn more about these programmes in the next section.

12.5.5 Reference Service

Reference service is a personalized service which is provided in response to the request from the user. Request may be for locating an answer to the fact finding question; for literature search for solving research problem; for compiling a bibliography; or for general help. Ranganathan defines reference service as "Personal service to each reader in helping him to find documents, answering his interests most pin-pointedly, exhaustively and expeditiously." It is also he says, "To provide the right book to the right reader, in the right personal way."

To provide the service the librarian may utilize the resources available in the library as well as those available outside the library. Depending upon the user's requirement, librarian may give information itself or the documents containing the information. Basic services under this category are a) Ready Reference Service, and b) Long Range Reference Service.

a) Ready Reference Service

This service deals with providing answers to fact-finding questions from the users. Questions such as - What is the capital of Zimbabwe? Where can I find information on planet Mars? Who is the Vice–Chancellor of Panjabi University?

When will the next total solar eclipse occur? When was Japan struck by Tsunami? To provide answers to these what, why, where, who, and when types of questions, standard reference sources like dictionaries, encyclopedias, yearbooks, almanacs, gazetteers etc are consulted and answers provided. The time taken to find answers to these questions is very short, ranging from a few minutes to half an hour or so. That is why this type of reference service is known as **"Ready Reference Service or Short Range Reference Service'.**

Some examples of type of queries (for ready reference service) and the sources from where one can find the answer are listed in Table 12.2:-

Sr. No.	Topics	Type of questions	Type of Reference Sources
1	Grammar & Language	How should I pronounce the word 'Schedule'?	Language Dictionaries
2	Background information on a topic	Where can I find information on history of telecommunication?	General Encyclopedia
3	Trends	What major developments took place in the field of space research last year?	Yearbooks
4	General facts, astronomical data	Dates of eclipses of the sun and moon.	Almanacs
5	Places	What is the area and population of Zambia?	Geographical sources, General Encyclopedias
6	People	A brief life sketch of Rabindra Nath Tagore	Biographical sources general encyclopedias
7	Organizations	Names and addresses of electronic industries in India.	Directories

Table 12.2: Types of Questions and Sources to be consulted

Most of the queries received from students in school and college libraries are of ready reference type. However, the percentage of ready reference questions handled by libraries, differ from library to library. In one study it was found that 60 percent of the questions handled by a public library were of ready reference type and the rest, 40 percent, were for the background information on a topic. While in an academic library it was found that 40 to 50 percent of the questions were of ready reference type.

Ready reference service is not limited to the users who visit the library personally to ask questions, many libraries offer this service on the telephone, through correspondence, via e-mail, or Internet as well.

b) Long Range Reference Service

This service is generally required by specialists, such as R&D personnel, professors, business executives or professionals like doctors, engineers etc. They seek information for solving a research problem, for delivering a lecture, for writing a paper or for some other purpose in hand. To provide this service, information may be searched in many sources including printed as well electronic sources such as Internet and databases. At times, depending upon the query, organizational and informal sources are also consulted to provide the service. Since to provide this service a wide range of sources are consulted, the time taken to provide this service is much longer than the ready reference service. That is why this service is known as long range reference service.

The type of information required may be highly specialized in nature, or information sought may involve an opinion or point of view on a particular topic, or information required may be in foreign language sources for which translation services are to be arranged. Depending upon the type of query, it may take an hour or two to couple of weeks' time to search and provide the information.

In ready reference service, data or facts are provided, while in long range reference service documents, periodicals or reports containing the required information are provided.

12.5.6 Reader Advisory Service

This service deals with providing reading guidance to the users. The basic aim of this service is to motivate the library users to use the library and inculcate a good reading habit. The service helps the readers to select the right book for educational and recreational purposes. Such a service is usually offered in school and public library. School children often require this type of service. It is in the school that a positive attitude towards the library should be developed, so that, when children grow up they know the importance of library and its resources for lifelong learning and personal development.

12.5.7 User Orientation

Libraries, particularly academic libraries, normally organize 'user orientation' or 'user initiation' programmes for the new students every year in the beginning of the academic session. Such programmes acquaint the user with the library and its facilities such as general rules and regulations of the library, the library collection and its location, catalogue of the library and how to use it, lending and borrowing facilities, and about reference and information services of the library. The basic aim of the user orientation programmes is to introduce the

library and its services to the new user. These programmes are in the form of a lecture by the librarian followed by a tour of the library; or a brochure containing all the information which is distributed to the students; or an audio/visual kit that is prepared to introduce the library to the new comer.

INTEXT QUESTIONS 12.2

1. Enumerate the basic or essential services provided by libraries.
2. Define Reference Service.
3. What is the Reader Advisory Service and why it is provided?

12.6 NEED FOR OTHER DESIRABLE SERVICES

During the 20th Century, particularly after World War II, there was tremendous increase in research activities the world over. This resulted in exponential growth of published literature particularly in the field of science and technology. Government sponsored research, particularly in areas of space sciences, defence sciences, nuclear sciences, etc. also contributed to this growth. The interdisciplinary nature of the above frontline areas of research resulted in scattering of information in different disciplines. Research results were being brought out in a wide range of publications, such as primary periodicals, research reports, conference proceedings, theses, dissertations, patents, etc. As a consequence of the growth in volume, diversity and complexity of information sources, users, particularly scientists and technologists as well as managers found it difficult to keep track of the latest developments in their areas of interest.

To solve this problem libraries, particularly scientific and technical libraries and information centers attached to Research and Development organizations, started collecting, selecting and organizing latest published literature in specific discipline and bringing to the notice of the researchers as a service on a regular basis. Such information services were being provided in anticipation of the demands from the users. Generally, current awareness type and condensation type of services were offered. Provision of these services led to the demand for other services like reprographic service, document delivery service, translation service and literature search and compilation of subject bibliographies, and referral services. Advances in computers and communication technologies and use of computers in libraries raised the demand for IT related services. In the subsequent sections you will get a brief overview of these services.

12.7 OTHER DESIRABLE SERVICES

The other desirable services are being given below:-

- Current Awareness Services
- Condensation Services
- Literature Search and Compiling a Subject Bibliography
- Reprographic Service
- Document Delivery Service
- Translation Service
- Referral service
- User Training
- Information Technology (IT) Related Services

12.7.1 Current Awareness Services

To keep users abreast of the current developments in their respective field of interest, current awareness services are offered to the users. This involves scanning the newly available documents in print as well in non-print form, selecting items relevant to the needs of individual or group of users, recording them and disseminating them to the users on a regular basis. Current awareness services meet the current information needs of the users. The types of services provided under this category are:-

- Accession List/ Current Awareness List
- Title Announcement Service/Content-by-Journal service
- Selective Dissemination of Information
- Newspaper Clipping Service

You will study about these services in detail in lesson 13.

12.7.2 Condensation Type

In this type of service, contents of the documents are condensed or summarized along with bibliographical details of the documents. This enables the user to identify the basic contents of the document quickly and determine its relevance to their interest. At times a well-prepared abstract serves as a substitute for the document. Types of services under this category are:-

- Abstracting Service
- Digest Service

You will study about these services in Lesson 13.

12.7.3 Literature Search and Compiling a Subject Bibliography

Literature search is a search for published information on a subject conducted systematically using bibliographic tools for locating as much existing material on a topic as possible. Literature search and compiling a subject bibliography on request is a very important service offered by the library. A subject bibliography is a list of documents on a particular subject. This service helps the user to know about previously published literature on his topic of interest. The list may be comprehensive or selective depending upon the requirement of the user.

12.7.4 Reprographic Service

Reprography deals with reproduction of various types of documents, such as books, journal articles etc. by photocopying, photography, microfilming or digital imaging using some machines. Most of the libraries these days use a photocopier to give copies of the documents (parts of books or journal articles) to the users on demand. This service is called reprographic service. The service is offered either free or users are charged nominally for the service to curb misuse of the facility.

12.7.5 Document Delivery Service

This service deals with the supply of document(s) to the users on demand, either in original or its copy in print or non-print form, irrespective of its location. A number of libraries and information centers in India offer document delivery service for copies of a journal article, a dissertation, or a report, etc. published anywhere in the world. On receiving the request from their patrons, the library or information centre traces the location of the requested item in India as well as abroad, procure it and deliver it to the user. Some of the University libraries under INFLIBNET and some information centres such as National Institute of Science Communication and Information Resources (NISCAIR) provide the document delivery service.

12.7.6 Translation Service

This service deals with the translation of contents of a document from one language to another language on demand. Translation service is a specialized

service requiring a number of language experts as well as subject experts to carry out the translation. Most of the libraries do not have an in-house facility for translation. But libraries can play active role in meeting users' demands for translation. They should have information about translation centers, professional associations, government agencies and private agencies providing translation services. Institutions like National Institute for Science Communication and Information Resources, New Delhi (NISCAIR) and some of the other national research institutions have professional translators who carry out the translation from the foreign language into English. Some of the websites also offer free translation services.

12.7.7 Referral Service

In most of the libraries, the services are offered mainly from resources available in the library. But, at times, users require information that is not available in the library, but may be available elsewhere with other organizations or some experts. Then users are referred to the sources where the required information is available. The source may be either in the form of a document, or an organization or an individual. This service is called referral service. Referral service does not provide users with the documents or information needed by them, but directs them to the sources of information where required information is available.

12.7.8 User Training

A wide range of training programmes are provided by the libraries. These training programmes aim to help the user to find and search information independently. Depending upon the type of instructions, the programme may be for user orientation, bibliographic instruction, or user education programme. You will study about these programmes in Lesson 13.

12.7.9 Information Technology (IT) Related Services

Advances in information and communication technology and widespread use of Internet by the users, has raised the demand for provision of IT related services by the libraries. Some of the services offered under this category are:

- Online Public Access Catalogue (OPAC)
- Library Website
- Virtual Reference Service
- Computerized Circulation Service
- Access to e-Publications

a) Online Public Access Catalogue

It is a computerized catalogue of library resources available to public for searching online. Earlier OPACs was developed as stand-alone online catalogue, which users searched on the computer terminal available in the library. With the arrival of Internet, most of the libraries have made their OPACs accessible via Internet, which is accessible to users all over the world on a 24X7 basis. Users can search OPAC remotely and find information online. The search facility apprises the users about the availability of each item for circulation, including the current status of individual copies of a title and the reservation status.

b) Library Website

A web presence is very important for the library to reach its users. On the library website, users can search library resources through Online Public Access Catalogue (OPAC) from anywhere and at anytime using Internet without personally visiting the library. Users can reserve a book; make suggestions for purchase of a book, and renew online the book borrowed from the library. Many libraries are providing links to OPAC of other libraries which are useful for their users. Some libraries are also providing online access to union catalogue of books, theses, conference proceedings etc. of the participating libraries which users can search remotely.

c) Virtual Reference Service

Many libraries offer reference services in an online mode where the user can communicate with the librarian from a remote location face-to-face as they normally do in traditional reference service. Many libraries provide a list of frequently asked questions (FAQ) and their answers on their website, which users can access anytime and from anywhere using Internet.

d) Computerized Circulation Service

In manual circulation service, the circulation section issues books to the readers by using the card system or the register system and maintains borrower's cards. In a computerized circulation system, there is no need for the library to issue and maintain borrower's cards or tickets. Every member requires a single card with unique identification number (such as library membership number) to be used by the software to access the member database. The software also controls the multiple borrowing facilities.

e) Access to e-publications

Library can provide access to its electronic publications such as full text e-journals, e-databases which the library subscribes to. Access can also be

provided to e-publications of library's parent organizations such as annual reports, research articles, and other publications. These days most of the reference books are available on CD-ROM and on the Internet for online searching. Libraries can acquire some of them with multimedia facility.

INTEXT QUESTIONS 12.3

1. Enumerate other desirable Services offered by the libraries.
2. What factors led to the provision of IT related services? List the services offered under this category.

12.8 TYPE OF LIBRARY AND THE SERVICES OFFERED

12.8.1 Academic Libraries:

These comprise school, college and university libraries. Let us study what types of services are provided by these libraries.

School library: The school library is the place where students are exposed to the library for the first time. Good or bad impressions of the library are formed here by the students. Special efforts should be made by the library to encourage and motivate the students to use appropriate reference, fiction and non-fiction books to support education and for entertainment. The library should provide readers' advisory services and instruct the students in the use of library and its resources. The teachers also should be encouraged to teach through library resources and for this the library should provide the necessary documents to the teachers. Now most of the children's standard reference books like dictionaries, encyclopaedias etc. are available on CD-ROM, DVD and online on the Internet. These sources have simple, easy- to- read articles with illustrations and embedded multimedia. The library should acquire these resources and encourage students to use and learn from them.

College Library: College life offers much more attractions to the college students than the library and its services. Here the librarian has to make a special effort to attract students towards the library and its services. Apart from basic services, the college library provides instructions in the use of library and carries out literature search and compiles bibliographies, when required. The library instructions should be provided to the students when classes start and students are required to prepare and submit class assignments. The user instructions given at that time will have a positive effect and encourage students to use the library and its resources. The library should provide IT based services to attract this category of users.

University Library: The University library is a part of the university set-up and supports teaching, research and publication functions of the university. In addition to the basic services, the library provides reference service, current awareness service, indexing and abstracting service, document delivery service, reprography service and holds library exhibitions. Library compiles subject bibliographies on request as well as during special occasions such as during seminars and workshops.

12.8.2 Public Library

The Public library serves the general public. Users of the library include people from all walks of life such as students, housewives, professionals, businessmen, retired persons etc. Their interests and educational qualifications vary widely. They use the library for recreation, information, learning or inspirational purposes. In order to serve them better, the librarian should study the information needs of the users and provide the services accordingly. Moreover, the public library should gather information about local institutions, local industries, local history and important personalities of that area. It is observed that most of the ready reference queries posed by public library users are related to the above-mentioned local bodies. Among the basic services offered by the library, the reader's advisory service for children and housewives should be given particular attention. It is observed that children, and sometimes housewives, need help in the selection of the right book for information as well as for recreational purposes.

12.8.3 Special Library

A special library specializes in a particular subject or group of subjects or a particular form of documents. Some professionals consider libraries serving the needs of special clientele such as children, blind persons, patients etc. as special libraries. Here, we will discuss special libraries that are attached to R&D organizations. Such libraries serve the specialists of the R&D organization, who are actively engaged in research in a particular subject discipline. Library offer specialized services to these R&D personnel. It provides information not only on demand but also in anticipation of need. Provision of SDI service, contents-by-journal service, indexing and abstracting service, document delivery service, searching and provision of required information from anywhere and in any form, getting the translation done on demand, etc. are some of the services rendered by special libraries. Some special libraries offer access to full text e-journals where researchers can search and view the articles and if found useful can get the article printed on their personal computers. Many special libraries have joined e-journal consortia to have access to computerized databases as well as to get access to full- text e- journals for their users.

INTEXT QUESTIONS 12.4

1. Describe the types of services offered by a university library.
2. Discuss the services provided by a special library.

WHAT YOU HAVE LEARNT

- Libraries provide reference and information services to users to meet information requirements of the users.
- Reference service is concerned with direct personal assistance to the user seeking information.
- Information services are provided in anticipation of various needs of the users of libraries. These services are also provided on demand from the users.
- Basic or essential services offered by all types of libraries irrespective of the type or size are lending service, reservation of documents, inter-library lending, assistance in the use of library and library tools, reference service, readers' advisory service and library orientation.
- Growth in volume, diversity and complexity of information resources, advances in information and communication technology and change in information seeking behavior of users have resulted in an increased demand for other information services including IT- based information services.
- Services offered under other desirable services are current awareness service, condensation type, literature search and compiling subject bibliographies, reprographic service, document delivery service, translation service, referral service, and Information Technology (IT) related services.

TERMINAL QUESTIONS

1. Define reference service. Bring out the differences between ready reference service and long- range reference service.
2. Write a short note on the readers' advisory service in the library.
3. Briefly describe the basic services which all libraries should provide to their clients.
4. Describe the IT related services which modern libraries provide.

Notes

ANSWERS TO INTEXT QUESTIONS

12.1

1. Reference service is concerned with direct personal assistance to the user seeking information. Information services are provided in anticipation of various needs of the users of libraries. Differences can be enumerated as follows:-

REFERENCE SERVICE	INFORMATION SERVICE
Traditional Service	Non-Traditional Service
Emphasis is on providing documents	Emphasis is on providing information
User is given the material or directed to locate the material	Attempt is made to provide exact information
Aim is to instruct the user	Less concerned with instructing user
Service provided on demand	Service provided in anticipation of need
Passive service: Library staff waits for the user to approach them and make a demand	Active service: Library staff provide the service in anticipation to keep user well- informed

2. Four types of information needs of the users, such as i) Current Information Need, ii) Exhaustive Information Need, iii) Everyday Information Need, and iv) Catching up Information Need have been identified. It is further observed that information needs vary from person to person and a particular person may have a different need at a different point of time. When library users need to keep themselves up-to-date with the latest developments in their areas of interest on a regular basis, the need is known as current information need. When a library user wants to have exhaustive information on a particular topic, the need is known as exhaustive information need. Everyday information need is the need for a specific piece of information which users require, generally in their day-to-day activities. The need is generally for factual information, which is normally available in standard reference books. The catching-up Information need arises when a user, who is not conversant with a particular subject field, requires an account of the overall developments in that subject in a short and compact form.

12.2

1. Basic or essential services offered by all libraries irrespective of the type

or size are lending service, reservation of documents, inter- library lending service, assistance in the use of library and library tools, reference service, readers' advisory service and library orientation.

2. The reference service is a personal service which is provided in response to the request from the user. The request may be for locating an answer to the fact- finding question; for literature search; for solving a research problem; for compiling a bibliography; or for general help. The reference service can be defined as "Personal service for each reader in helping him to find documents, answering his interests most pin-pointedly, exhaustively and expeditiously."

3. The readers' advisory service deals with providing reading guidance to the users. The basic aim of this service is to motivate the library users to use the library and inculcate good reading habits. The service helps the readers to select the right book for educational and recreational purposes.

12.3

1. The services offered under other or desirable services are current awareness type, condensation type, literature search and compiling subject bibliography, reprographic service, document delivery service, translation service, referral service and Information Technology (IT) related services.

2. Advances in information and communication technology and widespread use of Internet by the users, has raised the demand for provision of IT related services by the libraries. The services offered under this category are provision of Online Public Access Catalogue (OPAC) for accessing library resources, hosting of the library website, online reservation/ suggestion of books, virtual reference service, computerized circulation service, providing access to e-Publications.

12.4

1. The University library is a part of the university set-up and support teaching, research and publication functions of the university. The basic services offered are lending service, reservation of documents; inter- library lending, assistance in the use of library and library tools, reference service, readers' advisory service and library orientation. In addition to basic services the library provides the current awareness service, indexing and abstracting service, document delivery service, reprography service and holds library exhibitions. The library compiles subject bibliographies on request as well as during special occasions such as during seminars and workshops.

2. Special libraries that are attached to R&D organizations serve the specialists of the R&D organization, who are actively engaged in research in a particular subject or discipline. The library offers specialized services to these R&D personnel. It provides information not only on demand but also in anticipation of need. Provision of SDI service, contents-by-journal service, indexing and abstracting service, document delivery service, searching and provision of required information from anywhere and in any form, getting the translation done on demand etc. are some of the services rendered by special libraries. Some special libraries offer access to full text e-journals where researchers can search and view the articles and if found useful can get the article printed on their personal computers. Many special libraries have joined e-journal consortia to have access to computerized databases as well as to get access to full- text e- journals for their users.

GLOSSARY

CD-ROM: Compact Disc Read Only Memory. The disc can store as much as 325,000 pages of information.

Databases: A database is an organized collection of related data or information in a computer which can be easily accessed, managed and updated.

DVD: Digital Video Disc.

e-Journal: Electronic journal published and distributed in electronic form.

e-Journal Consortium: An agreement among the libraries to jointly finance the e-Journal subscription and share the resources.

Multimedia: Is an integration of multiple forms of media such as text, graphics, audio, video into a single entity in digital environment which can be accessed through a computer system.

SUGGESTED ACTIVITY

1. Visit a school and a college library. Find out the services provided by these libraries.

2. Spend one day in a public library and observe its activities in terms of services provided and types of users served. Write a brief report on the same.

13

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TRADITIONAL LIBRARY SERVICES: RESPONSIVE AND ANTICIPATORY

13.1 INTRODUCTION

Libraries, traditionally, provide a variety of services to users by organizing their collection for ease of access and availability, build up tools to inform what document resources they have, and also to assist users in getting any information needed.

In lesson 12, you have been provided an account of information needs of library users and an overview of types of services provided by the libraries to meet these needs. In this lesson you will learn in detail about how these services are provided and what the impact of information and communication technologies is on the provision of these services.

13.2 OBJECTIVES

After studying this lesson, you will be able to :

- explain the role of traditional library services;
- identify the categories of traditional library services, viz. Responsive and Anticipatory;
- list out various Responsive and Anticipatory Services;
- describe the need and functions of Responsive Services;

- describe the role of Anticipatory Services in libraries; and
- give examples of Responsive and Anticipatory Services.

13.3 TRADITIONAL LIBRARY SERVICES

Library Services are generally known as Reference and Information Services. These are considered to be the most essential and important of all activities of a library. In order to organize and operate these services effectively and efficiently to the fullest satisfaction of users, these are broadly divided into two distinct categories, viz. Responsive and Anticipatory.

13.4 RESPONSIVE SERVICES

Responsive services are offered in response to requests from the users, for making use of the library tools and facilities, or help users in obtaining answers to any type of reference questions. The request may come from the users in person, over the telephone, through correspondence, or via e-mail or online via Internet. The technology now allows users to submit their requests to the library at any time from any place in the world. These services are listed below:

- Assistance in the use of the library and its tools
- Lending Service or Circulation Service
- Inter- Library Loan
- Reference Service
  - Short-range Reference Service
  - Long-range Reference Service
- Literature Search
- Compilation of Subject Bibliographies
- Photocopying Service
- Referral Service
- Translation Service

You have learnt about the above mentioned responsive services in lesson 12 of this course. In this lesson, three responsive services, viz. Long- Range Reference Service, Literature Search and Compilation of Subject Bibliographies will be dealt with in detail.

INTEXT QUESTIONS 13.1

1. What do you understand by responsive services?
2. List out different responsive services.

13.4.1 Long- Range Reference Service

This reference service is generally provided to a specialist, who is seeking information for research, for delivering a lecture, for writing a paper or for solving a problem. Information sought may be too specialized in nature; it may be too recent; it may be related to another period; or it may be in another language. Depending upon the query, the information may be searched in several sources including printed as well as electronic sources. At times, organizational or informal sources are also consulted to provide the desired information. As a wide range of sources are consulted, a considerable amount of time is taken to provide this service.

Long -Range Reference Questions demand not only more time to find the answers, but also need to consult sources which may or may not be standard reference books. To handle such long range and at times, intricate reference questions, there are a certain set procedures and practices which are generally followed, so that the search for the query is in the right direction and the information collected is acceptable to the user. The foremost and the most important step, here, is to have personal dialogue with the user. A dialogue with the seeker, to know the field in which he/she works, the purpose of the need and such other details, would provide tips to formulate a search strategy. This dialogue is usually referred to as a 'Reference Interview'. The 'Reference Interview' helps to know the query thoroughly, the purpose for which the information is sought, the background of the user and the type of information sources required. An example of a long- range reference question is given below:

A reader specializing in Sociology and involved in a special study of children's literature, wanted to know if there is an analogy of the Cinderella myth in Indian children's literature. After a reference interview, it came to be known, that the person was working on 'folk literature'. A search under the subject heading *folk tales* in the library catalogue, gave a citation of a book on a collection of Deccan tales. The book was located in the library and consulted. There was an exactly analogous story of Cinderella in the story of 'Sudevi Bai', describing her initial sufferings followed by her good fortune, resembling the story of Cinderella. Within a few hours of the request, the researcher was informed about the book which was then issued to the user.

Both, short and long range reference services promote the use of library resources, connect the users with their appropriate and relevant documents available in the library that meet their information needs and requirements. The depth and range of these services varies with the type of library and the kind of users it serves.

13.4.2 Literature Search

Literature search is a systematic search for published material on a specific topic. This service is concerned with searching and locating the documents in response to a specific request from the user.

The queries such as, I have to write a paper on different breeds of horses, where can I find some information? Or I have to make a comparative study of republic Vs democratic forms of government, where can I find the information? Such queries, depending upon user' needs lead to carrying out *specific searches*, finding the required document(s) and giving it to the user. This type of service is also known as *long- range reference service*. While, in ready reference or short range reference service, the answer is mostly in the form of data or facts, i.e. short answer from reference books, in long range reference service, the answer is in the form of one or more documents containing the information.

To meet information needs of researchers (scientists, technologists, social scientists, etc.) at times, extensive literature searches are carried out in several sources like books, periodicals, non-book material, etc. Sometimes informal sources are also consulted. Thus, the literature search in these cases is more exhaustive, both in depth and range. To complete this exhaustive search, it may take several weeks. This eventually may lead to the second step, namely, compilation of a bibliography on the subject.

13.4.3 Compilation of a Subject Bibliography

Subject bibliographies are compiled by libraries on requests from the users. Sometimes bibliographies are compiled on a regular basis in anticipation of users' needs. At times, bibliographies are compiled on special occasions, such as during the seminars and workshops to provide the participants with the latest literature on the subject. University and special libraries offer this service more frequently than the public library. The bibliographical compilation service is given only to those who are involved in research projects and not to research students who are expected to prepare their own bibliographies with guidance.

a) Search Process: Manual

For literature search and compiling a subject bibliography, it is important to know the basic steps involved in its preparation. In manual search, printed sources are consulted, while in computer based search, computerized databases are used. The basic steps in a manual search and compilation of bibliography are as follows:-

1. Understanding the subject
2. Taking a decision on the scope, coverage and period

3. Formulation of a search strategy
4. Searching secondary and primary sources
5. Preparation of entries
6. Arrangement of the entries
7. Preparation of an index
8. Supplying the Bibliography

Step 1: Understanding the subject

In this step the exact subject to be searched and related areas to be covered are identified. For this, subject dictionaries and subject encyclopaedias are consulted, when in doubt. Here personal interaction with the user is also very important to know the subject scope and the purpose for which information is required.

Step 2: Taking a decision on the Scope, Coverage and Period

In this step a decision is taken on the scope, coverage and period of subject bibliography. Scope specifies whether the bibliography should be comprehensive or selective. Coverage specifies the types of documents to be covered, e.g. periodical articles, books, theses, reports, etc. and period specifies whether bibliography should be current or retrospective. For this, personal interaction with the user, known as *'Reference Interview'* is very important. The reference interview helps to know:-

- The query thoroughly
- The purpose for which information is required
- The background of the user
- Subject, scope, types and period of the documents to be covered,
- What the user has already consulted, and
- The time frame within which information is required.

Step 3: Formulation of the Search Strategy

In this step a systematic plan for conducting the search is formulated. This involves selecting keywords to represent the subject, identifying abstracting and indexing periodicals on the subject.

Step 4: Searching Secondary and Primary Sources

In this step indexing and primary periodicals are searched to identify and retrieve relevant items for the bibliography and finally, primary sources are consulted to find more recent information.

Step 5: Preparation of Entries

In this step an entry is prepared for each item that is identified as relevant. Each entry is noted down on a card, so that later on these entries can be arranged in a systematic order. Each entry is written in standard format and contains sufficient information to identify the document. To write bibliographical details in standard format, national or international standards are followed.

Step 6: Arrangement of Entries

The entries are arranged in some convenient order to facilitate browsing. If the number of entries in a bibliography is small, the entries are arranged alphabetically, author- wise or chronologically by year of publication. But, if the number of entries in a bibliography is large, the entries are arranged in a classified order or under broad subject headings

Step 7: Preparation of Index

In this step various indexes (such as title, author, subject index, etc.) are prepared to provide multiple means of access to the user. Indexes are prepared mainly for large bibliographies.

Step 8: Supplying the Bibliography

The last step is to get the subject bibliography typed to deliver it as a final product in required form and format to the user.

b) Search Process: Computer- Based

At present, most of the indexing and abstracting periodicals are computerized and available in three different formats, viz. in print, on CD-ROM and on the Web for online searching. Print version of these periodicals can be searched manually using various indexes. The other two versions are available in electronic database form and can be searched using computers. Electronic databases offer more search options, can be searched speedily, and are updated more frequently.

Basic Steps for Computer- Based Searching

With the introduction of web- based graphical user interface, the task of online searching has become quite easy. Most of the online e-database producers and CD-Rom producers offer a free training module where a novice user can search the database step-by-step and retrieve the required information. To conduct effective and efficient searches, one has to familiarize oneself with various search and retrieval options available with specific electronic database before searching. In addition, there are some basic steps for conducting computer based searching and online searching. These steps are as follows:-

1. Understanding the subject,
2. Taking a decision on the scope, coverage and period,
3. Getting connected to the Internet
4. Logging on to the Search Service Provider
5. Selecting the appropriate Database
6. Formulating the search expression
7. Selecting the appropriate format for display of records
8. Reformulating the search expression, if required
9. Selecting the mode of delivery

The first two steps, i.e. steps 1 and 2 are the same as in a manual search. Steps 3 and 4 are not required while searching CD-ROM databases. You do not need the Internet connection to search CD-Rom products. Like print product, the CD-ROM product remains in the library for unlimited use, once it is purchased.

Step 3: Getting connected to the Internet

To search online e-database, an Internet connection is required. In addition to the Internet connection, one needs to register with an online search service provider that provides access to the databases for searching. Online search service provider may be a vendor like EBSCO, Emerald or any other, providing access to a number of databases from different publishers, or a publisher providing online access to its own databases like H. W. Wilson & Co., CAS (Chemical Abstracts Service), etc.

Step 4: Logging on to Search Service Provider

To log on, one should know the web address of the search service provider.

For example, for Emerald it is http://www.emeraldinsight.com/. To access and search the database one has to enter the user's ID and password, which is provided when a user registers with the search service provider.

Step 5: Selecting the Appropriate Database

The next step is to select the appropriate database to search. Most search service providers allow users to browse through their database categories to select the appropriate database.

Step 6: Formulating the Search Expression

This requires selection of appropriate terms or phrases for searching the database. Many databases have their own specialized vocabulary (thesaurus) for searching the database. Their thesaurus is available online and one can select appropriate terms and phrases from this.

Step 7: Selecting the appropriate format for display of records

When search terms are entered into the system, the database starts displaying the records that match the search expression. Here one can specify whether one wants to browse the full record or brief record for selection. Most of the databases offer this option.

Step 8: Reformulating the Search Expression

If search results are not satisfactory, one can reformulate the search statement. Online search is usually a repetitive process, where the user conducts several searches, compares the results, and modifies the search statement or conducts a new search in order to get the best results.

Step 9: Selecting the mode of delivery

One can download all the selected records online on the local computer or order offline prints out by mail.

INTEXT QUESTIONS 13.2

1. What do you understand by literature search?
2. List out the basic steps involved in compilation of a bibliography manually.
3. What are the various steps involved in compilation of a bibliography using e-databases?

13.5 ANTICIPATORY SERVICES

Services provided in anticipation of the demands from users are called anticipatory services. These services are also known as active services. The need for these services was felt due to i) tremendous growth of published literature, particularly in areas of science and technology, ii) interdisciplinary nature of research areas, resulting in scattering of information in different disciplines, and iii) publications of research results in different types of sources and in different formats. As a consequence of the growth in volume, diversity and complexity of information sources, the researchers found it difficult to keep themselves abreast of the latest developments in their areas of interest. To solve this problem, the libraries, particularly S&T libraries started providing some form of anticipatory services for their users, depending upon their needs.

To provide these services, the information needs of the users are assessed and then services are designed accordingly. Initially the service is provided on trial basis and when response is satisfactory, the service is regularized. Now not only S&T libraries or information centers, but all kinds of libraries are offering some form of anticipatory services, depending upon the needs of their users.

Anticipatory services are best given with a good understanding of the needs and requirements of users, depending upon the types of users in different types of libraries. For example, in academic libraries, i.e. those that are meant to support education, learning and research, it is possible to assume the needs of users with a certain degree of accuracy and offer anticipatory services. The service can be planned, as learning and study in these types of academic institutions are based on curricula, syllabi, teaching and learning of different courses. Research activities can also be supported, anticipating the needs for providing specialized services.

A wide range of anticipatory services are provided by different types of libraries. Some of the anticipatory services are:

- Preparation of lists of reading material
- Current Awareness services
  - Accession List
  - Content-by-Journal Service/ Table-of-Content Service
  - Selective Dissemination of Information (SDI) Service
  - Newspaper clipping services
- Indexing and Abstracting Services
- User Education

Notes

13.5.1 Preparation of Lists of Reading Material

In schools, for the benefit of students and teachers, lists of text books, in addition to the prescribed text books, reference books and journal articles on specific topics, are usually prepared in advance to help and assist users in their term projects and other related work.

Special lists and bibliographies with annotations are prepared in advance for events, such as inter school/college competitions comprising oratorical contests, debates on topics of current interest, etc.

In other types of libraries also such special lists of literature may be prepared in advance for forthcoming events and activities.

13.5.2 Current Awareness Services

Current awareness services are provided in academic and research libraries, for the benefit of advanced level students and researchers, to keep them abreast of current developments in any discipline. The work involves scanning newly available documents in print as well in non-print form, selecting items relevant to the needs of individuals or groups of users, recording them and disseminating them to users on a regular basis. Current awareness service is an ongoing service that enables one to monitor new information on a regular basis. The types of services offered under this category are:-

- Accession List
- Content-by-Journal Service
- Selective Dissemination of Information (SDI)
- Newspaper Clipping Service

a) Accession List

The accession list basically covers the latest books acquired by the library. This type of current awareness service is most commonly offered by the libraries. Apart from displaying the latest publications, the accession list is brought out regularly (fortnightly or monthly) to inform the users about the latest additions to the library.

b) Content-by-Journal Service/Table of Content Service

Here content pages of the latest primary research journals are duplicated, arranged journal wise and disseminated to the users on a regular basis. This service informs users about the recent articles published in the journals of their interest and keeps them abreast of the current developments in their area of

work. Photocopies of full texts of articles, as a result of their perusal of CAS products, are supplied on demand.

c) Selective Dissemination of Information (SDI) Service

SDI service is a personalized current awareness service. It is provided to individuals or a research group, working on the same research project in an organization. It is a computerized service. SDI system comprises six components, viz. user profile, document database, matching mechanism, notification, feedback mechanism, and modification of the profiles.

User Profile: To provide the SDI service the user's profile is created. User profile consists of subject terms, which represents the user's interest most precisely.

Documents Database: This is a computerized file containing recent documents with complete bibliographical details along with the terms representing subject contents of the documents.

Matching Mechanism: At fixed intervals, which may be weekly or fortnightly, the user profile and documents database are compared by the software. As per the instructions, whenever a close match is observed between the subject terms of the user profile and the document record, details of both the records are noted by the system.

Notification: Each individual user is sent a notification from the system whenever a close match is observed between his profile and document record. The notification is sent to alert the user about the recent items of his research interest which are added to the document database.

Feedback Mechanism: Here the user assesses the relevance and usefulness of the items received by him through the system and provides regular feedback.

Modification of Profiles: Feedback from the user is analyzed and if required, the user profile is modified.

Tables-of-Content or Content-by-Journal service is based on broad subject area and serves several individuals. Here each individual has to browse through the entire list to select items of his interest. Whereas, in SDI service, which is oriented towards the user's current research interest provides only those items which are most useful to the user. The SDI service not only saves the efforts and time of the individual researcher, in addition, it ensures all relevant items of information are brought to his notice as quickly as possible.

d) Newspaper Clipping Service

Daily newspapers carry a large amount of current information about practically

every sphere of human affairs. They constitute very valuable information for many purposes and are always in demand by a variety of users for different needs. Apart from news, they carry reviews and analysis of current affairs, in every area contributed by journalists and specialists.

Keeping in view the importance of newspapers, libraries provide this information service based on newspapers. One such service is the newspaper clipping service. Under this service, libraries provide important news items of interest published in national and international newspapers to the organization. To provide the service, selected newspapers are scanned everyday and news items that are important for the organization are selected, cut and pasted on plain paper or card. Each news item is assigned a subject heading or class number. At periodic intervals e.g. daily or weekly, these news items (called clippings) are arranged by subject headings or class number and circulated to the users. The newspaper clipping service is quite common in media libraries and libraries of government departments, industrial organizations, etc.

INTEXT QUESTIONS 13.3

1. List out the various types of anticipatory services.
2. What types of anticipatory services can be provided in schools?
3. Why are current awareness services necessary? What types of libraries provide this service?
4. What purpose do newspaper clipping services serve?

13.5.3 Indexing and Abstracting Services

Apart from CAS services that deal with current literature, indexing and abstracting services are provided for accessing books, periodical articles, monographs, technical reports and such other types of publications for retrospective search. The bibliographic entries of these documents are prepared according to standard procedures, systematically arranged, organized and brought out at regular intervals, along with indexes. These services are issued at regular intervals like weekly, fortnightly or monthly. These services have extensive indexing system to facilitate searching.

Indexing services index each document along with full bibliographical details, so that particular document is identified and traced. Abstracting services provide a concise summary of the entire content of the document also. The summary enables the user to identify the basic contents of the document quickly and

determine its relevance to his research area of interest. At times, a well-prepared summary or abstract serves as substitute for the document.

These days, commercial indexing and abstracting services are available in most of the disciplines and all of them are available in machine readable form and can be searched on the computer using Internet. The libraries search the requisite databases and provide the service and supplement it with in-house resources.

INTEXT QUESTION 13.4

1. Why are indexing/abstracting services useful in research libraries?

13.5.4 User Education

While this topic is dealt with in lesson 12, we are mentioning it here as a part of anticipatory service.

A number of user studies conducted in different countries have revealed the fact that only a few users make optimum use of the various kinds of bibliographical reference tools, particularly the secondary and tertiary tools for literature search. To familiarize with the different kinds of valuable search tools, training in the use these types of tools has been considered desirable. Formal courses are offered in research and university libraries to those who are interested in this training facility. Imparting formal training courses to users is commonly referred to as User Education. Such courses have be planned, programmed and offered with a syllabus appropriate to the level and types of user groups. Sometimes instructional material can also be prepared to supplement the training.

WHAT YOU HAVE LEARNT

- In this unit, we have learnt that traditional libraries stock various kinds of reading materials, process and service them for use by a variety of users.
- These user services are organized in two groups' viz. Responsive and Anticipatory services.
- Responsive services are those that are offered to users who make personal visits to libraries or send requests through mails or through telephone messages.
- Anticipatory services are provided in anticipation of the demands from the users.

- The services under responsive services comprise providing assistance in the use of library and its tools, lending service, reference service, literature search, compilation of bibliographies, photocopying service, referral service and translation service.
- Reference service is of two types, short-range reference service and long range reference service. Short-range reference service deals with providing answers to fact -finding questions using standard reference tools. Long range reference service is provided in response to a request from the specialist and deals with literature search, finding the required documents, and providing them to the user.
- Services under anticipatory services comprise preparation of reading material, current awareness services, indexing and abstracting services and user education.
- Current awareness services keep users abreast of the current developments in their fields of interest. Current awareness services comprise preparation of reading list, content-by-journal service, SDI service and newspaper clipping service.
- Indexing and abstracting services help the users in retrospective searching of literature in their fields of interest.
- User education is a formal training facility offered by university and research libraries to interested users in the effective use of bibliographical search tools.

TERMINAL QUESTIONS

1. What are the essential differences between responsive and anticipatory services?
2. Explain the need for the current awareness service. Describe the services offered under this category.
3. What do you understand by literature search? Describe briefly the steps involved in manual and computerized literature search.

ANSWERS TO INTEXT QUESTIONS

13.1

1. Responsive services are offered in response to requests from the users, for making use of the library tools and facilities, or help users in obtaining

answers to any type of reference questions. The request may come from the users in person, over the telephone, through correspondence, or via e-mail or online via Internet. The technology now allows users to submit their requests to the library at any time from any place in the world.

2. Types of responsive services offered by the libraries are as follows:-

   - Assistance in the use of the library and its tools
   - Lending Service or Circulation Service
   - Inter- Library Loan
   - Reference Service
   - Literature Search
   - Compilation of Subject Bibliographies
   - Photocopying Service
   - Referral Service
   - Translation Service

13.2

1. Literature search is a long-range reference service for getting published information, conducted systematically using all bibliographic search tools, and aimed at locating as much material on the topic as possible.

2. The basic steps involved in conducting literature search manually are as follows:-

   (i) Understanding the subject

   (ii) Taking a decision on the scope, coverage and period

   (iii) Formulation of a search strategy

   (iv) Searching secondary and primary sources

   (v) Preparation of entries

   (vi) Arrangement of the entries

   (vii) Preparation of an index

   (viii) Supplying the Bibliography

3. The basic steps involved in compilation of bibliography using e-databases are as follows:-

(i) Understanding the subject

(ii) Taking a decision on the scope, coverage and period

(iii) Getting connected to the Internet

(iv) Logging on to the search service provider

(v) Select the appropriate database

(vi) Formulating the search expression

(vii) Selecting the appropriate format for display of records

(viii) Reformulating the search expression, if required

(ix) Selecting the mode of delivery

13.3

1. A wide range of anticipatory services are provided by different types of libraries. Some of the anticipatory Services are:
   - Preparation of lists of reading material
   - Current Awareness services
   - Accession List
   - Content-by-Journal Service/ Table-of-Content Service
   - Selective Dissemination of Information (SDI) Service
   - Newspaper clipping services
   - Indexing and Abstracting Services
   - User Education
2. In schools reading lists can be prepared for aiding students in project works and also for inter-school competitions like oratorical contests and debates on any topic.
3. CAS is necessary for active researchers to keep abreast of current developments in any discipline. It is offered in research and academic libraries.
4. Newspaper clipping service is particularly useful for journalists and specialist writers to contribute on current affairs in any field.

13.4

1. These services are necessary for researchers working on lengthy projects to have exhaustive references, both current and retrospective.

GLOSSARY

Abstracting services: Short summaries of articles of periodicals, collected and organized and brought out periodically for access

Indexing services: Providing access to journal articles and such other documents through organized arrangement of entries of subject headings

Referral centers: Are those that direct the user to a source of information which may be a document, an organization or an individual.

Union Catalogue: A catalogue of several libraries

SUGGESTED ACTIVITIES

1. Go to a library and find out type of Responsive Services being provided there.
2. Visit a library and find out if it provides any Anticipatory Service.

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14

MODERN LIBRARY SERVICES

14.1 INTRODUCTION

Internet came in to existence in the 1950s and gained popularity only in the mid 1990s. It has completely revolutionized each and every sphere of life, be it banking, entertainment, or education. Likewise, its impact on libraries has been stupendous. Libraries which are also known as knowledge centers, have taken advantage of Internet in offering new collections and services to their users. In this lesson, you will study about modern library services, their characteristics and importance for the users.

14.2 OBJECTIVES

After studying this lesson you will be able to

- explain the importance of modern libraries for the society;
- describe how Internet has changed the way libraries function;
- elaborate upon the services offered by libraries using new tools and technology;
- distinguish between manual and computerized services which libraries offer; and
- list out the various online resources.

14.3 MODERN LIBRARY

A modern library is a social organization which uses technology to offer information services. The services are offered to its heterogeneous population

on a 24X7 basis as and when required. It does not limit itself to offering "place-based services."

Some of the characteristics of modern libraries are:

- Modern libraries have a social function in making knowledge publicly available. They play two pivotal roles, firstly, to serve as a local centre of information and knowledge and secondly, to be a local gateway to national and global knowledge. They also serve as gateways to the world of knowledge for children by offering a wide spectrum of books to ignite their minds. They endeavour to cultivate reading habits among the children at an early age.

The modern library:

- selects, procures, organizes and delivers the widest possible range of current and quality information resources to its heterogeneous user population as and when it needs it.
- is a member of some regional or national network in order to cater to the information needs of its users, as, at times, information resources available with it may be inadequate to meet users' needs.
- maintains an accessible website and relies upon technologies for enhancing its services.
- makes concerted efforts to provide services as and when users need, besides providing place based services.
- provides reference and user education programmes on a regular basis. It also conducts information literacy programmes for its users.
- communicates and connects with the users on a regular basis, telling about its resources in order to attract them and ensure maximum usage of the resources.
- offers free Internet access, high speed broadband, Wi-Fi facilities which are required by students, and research scholars for writing term paper, research activities, searching jobs, etc.
- provides space to students and users for organizing exhibitions and community meetings. It offers "quiet zones" and spaces for group discussions.
- is accessible and friendly to users with physical disabilities. It has an Assistive Technology Centre to enable visually- challenged users to access computer and Internet resources. It also provides information resources in alternate formats in order to help the users with print disabilities.

- constantly evaluates its collections and services by gathering feedback from its user population, evolves and improves them in the light of the feedback received from the users.

INTEXT QUESTION 14.1

1. What is a modern library?

14.4 NEED FOR MODERN LIBRARY SERVICES

Earlier libraries were "place- based" service institutions which existed to cater to the information needs of their users. The users visited the libraries to consult various sources of information as per their needs. During the last three decades, the emergence of Internet technology, modern telecommunications and other allied areas like data processing, management information system, information retrieval systems, etc., has radically impacted the functioning and environment of libraries. Libraries are continuously transforming themselves and evolving to survive. They do not have the luxury to choose, to change and evolve, but they have to survive and maintain their prominent position as centers of knowledge and learning. There are various reasons behind this social phenomenon. Technology has brought a revolutionary change in every sphere.

There is change in the information- seeking behaviour of the users. Libraries have to change and adapt themselves in order to meet the information needs of the users. Libraries are supposed to provide information to the users as and when and in whatever format they need it. The new generation, which is popularly known as millennials or netizens, is more comfortable working in online environments.

The expectations and demands of the users have increased manifold. They are no longer content with place- based library services as they want information services beyond the four walls of the physical library.

It is advisable for the libraries to transform as per the expectations and demands of their user population. Libraries can implement new technologies for providing innovative information services in order to retain their existing clientele and attract new ones. If the libraries do not transform to provide new modern services as per the demands and expectations of the users, they risk slipping into extinction.

In short, we can say that modern library services are imperative because of the following reasons:

- Change in information seeking behaviour of users;
- Increased demands and expectations of the users;
- Availability of technology which facilitates availability and accessibility.

14.5 MANUAL AND COMPUTERIZED SERVICES

There are different methods of providing services in libraries which can be broadly grouped into two classes-manual and computerized services. These are discussed below.

14.5.1 Manual Services

Maintenance of various library records, registers and cards is known as Manual System. It entails execution of various activities and procedures by hand, without any intervention of computers. There are many libraries which perform housekeeping and routine operations, which are repetitive in nature, manually.

The services, which are provided or delivered to the users without using computers as an intermediary, are known as manual services. Whereas computerized services are offered by using computers as tools or intermediaries.

14.5.2 Computerized Services

Today, libraries are using computerized systems to maintain records of all activities and procedures. The libraries have computerized their house keeping operations like, acquisition cataloguing, circulation and recording details of journal subscription. Libraries use Library Management Software (LMS) for performing various activities of the libraries. The software has various modules for library activities. Using the software the routine work of the library is done speedily and efficiently. In simple words, in a computerized system, all housekeeping operations are done using computers. The computerized services are also offered to the users through LMS.

For example, the circulation section issues books to the readers by using card system or register system. In a computerized circulation system, there is no need for the library to issue and maintain borrower's cards or tickets. Every member requires a single card with unique identification number (such as library membership number) to be used by the software to access member database. The software also controls the multiple borrowing facilities.

14.5.3 Manual Vs Computerized Services

The manual and computerized services can be compared as follows:

Manual Services	Computerized Services
The circulation section issues books to the readers by using the card or the register system.	Every member requires a single card with unique identification number (such as library membership number) to be used by the software to access the member database. The multiple borrowing facility is also controlled by the software
The Technical section of the Library catalogues the books and prepares print or card catalogues. It also prepares lists of new additions manually.	OPAC is provided to the users for searching and finding library resources.
Libraries prepare bibliographies, abstracts and indexes as per the research needs of the users	Online access to indexing and abstracting services from commercial publishers are provided to the users.
Current Awareness Services (CAS) are provided to the users by routing the photocopies of Tables of contents of the journals.	Users are informed about arrival of new books and journal issues through mail alerts. The users are also taught how to get RSS feeds or e-mail alerts from publishers by signing TOC (Table of Content) alerts. The users have to register at the publisher's website for getting information regarding publication of a new journal. Registration is always free.
Reference service is provided by a face to face interview.	Reference service is provided through e- mail, chat, instant message, etc.
The staff monitors, supervises and maintains security in order to check and control theft, damage, vandalism in the library.	CCTV cameras are installed to maintain discipline and security.
Stock taking is done by comparing the shelf list with the books arranged in stacks.	RFID is resorted to for stock verification.

INTEXT QUESTION 14.2

1. Distinguish manual and computerized services with reference to circulation services and stock taking activities.

14.6 MODERN LIBRARY SERVICES

14.6.1 Access to E-resources

Earlier libraries procured, processed, organized and delivered various print resources like books, journals, newspapers, magazines etc., now they can actively procure their e- forms like e-journals, e-books, e-theses and dissertations and online databases. The libraries subscribe to e-resources and provide access to these resources via Internet.

The electronic resources are also known as online resources. They include both, "born digital" material which has been produced directly online and print resources which have been scanned and digitized.

The term "database" is used to refer to a collection of records each of which may have numeric, textual or image- based data. The databases are usually in a searchable format. It means that there is a search facility or tool which helps users in searching, locating and retrieving the information which they need. Library catalogues, OPAC, full text and bibliographical databases are all examples of databases.

As these resources are accessible via Internet, they are also known as online resources. Before the advent of Internet, these online databases were available as printed sources or on CD-ROMs. The examples of databases are given below:

- The journals published by Elsevier are available online through a database which is popularly known as Science Direct.
- The books, book series, journals published by Springer are accessible online through a database which is known as Springer Link.

The bibliographical databases provide references to published information like J-Gate, Scopus, etc. These databases provide abstracts of the journal articles. The users may read the abstracts and make an informed assessment of the relevance of the articles for their research needs.

14.6.2 Resource sharing

Resource sharing means common use of (each other's) resources by two or more

libraries. It is also an attempt by libraries to share information resources and services which may be limited or specialized and might not be available with a single library. No library can be self-sufficient because of a number of reasons like abundance of information, multiplicity of documents, paucity of space, shortage of staff. They form consortia and networks to share online resources like databases, online journals and books, theses and dissertations. Libraries form an association or network or cooperative organization to procure and share resources and services. These associations or networks are commonly known as consortia.

The examples of some consortia are:

INDEST (Indian National Digital Library in Engineering Sciences and Technology) http://paniit.iitd.ac.in/indest/

Indian National Digital Library in Engineering Sciences and Technology was set up by Ministry of Human Resources and Development in 2003. It has the following objectives:

- To subscribe to e-resources for the members of the consortium at highly discounted rates.
- To extend the benefit of consortia based subscription beyond the core members to other engineering and technological institutions.
- To find more avenues of cooperation and interaction among member libraries and other consortia.

UGC-INFONET Digital Library Consortium http://www.inflibnet.ac.in/econ/
UGC-INFONET Digital Library Consortium was set up in 2003 by the then President of India, after providing Internet connectivity to the universities under the UGC-INFONET programme, to provide access and promote the use of electronic journals among the researchers and academics of the country. The objectives of the consortium are to:

- provide access to scholarly electronic journals, full text and bibliographic databases to large number of universities and colleges;
- promote rapid and efficient access to scholarly content to the users;
- create and promote the use of ICTs in teaching and learning activities of the country;
- extend the benefits of the consortium to its associate members; and
- impart training to the users, librarians, research scholars and faculty members of the universities and colleges.

Many libraries have joined e-journal consortia to have access to computerized databases as well as access to full-text journals for their users. Libraries can now deliver links to full- text journals and articles within journals. With this facility the user can get access to full-text journals on his personal computer, browse through the article and if found useful, can get it printed on his desk top.

14.6.3 Remote access

Libraries provide "single sign on" facility to their users for remote access of the resources. In this, a single UN/PW is provided to the members, who can access all the resources of the Library, without visiting the library.

For example, the libraries use EZproxy which is an authentication and access software, provided by OCLC. It helps the users to get remote access to the licensed content of the library.

A screen shot of Jawahar Lal Nehru University, Central library providing remote access to e-resources is shown below:-

Fig. 14.1 : Snapshot of Gateway of e-resource of JNU Library

INTEXT QUESTIONS 14.3

1. Explain with examples how a library consortium promotes resource sharing.
2. What do you understand by remote access?

14.6.4 Union Catalogues and Web OPAC

The union catalogue is a combined library catalogue describing the collection of a number of libraries. Union catalogues and Web OPACs are useful to the library, as they assist in locating and requesting material from other libraries for document delivery and interlibrary loan.

14.6 5 Digital Reference services

Digital reference service is e-reference service, where users interact with computers or other Internet technology to communicate with reference staff, without being physically present. Communication channels used in digital reference are chat, videoconferencing, e-Mail, voice over IP, or Instant Messaging. It is also known as virtual reference service, online reference and remote access reference service.

14.6.6 E- Mail

This is the electronic mail facility which enables messages to be sent from one person's computer to another across a network or Internet. Libraries provide reference services through e- mail. The e-mail address of reference staff/ librarian is given on the library's website, readers can write and seek assistance for their information needs or any other aspect related to library. It is convenient for users as they can seek assistance without physically visiting the library. In online environment, the readers can freely submit their queries, unlike in face to face contexts, where the users may be hesitant to ask questions and seek help.

14.6.7 FAQ

This stands for frequently asked questions. It is a file or list of frequently asked questions with answers in the form of question and answer. The FAQs offer help to the users by giving information on various aspects, activities and issues of library. The library staff prepares a list of questions which are frequently received by the library, provides answers and hosts it on the library website. The readers can access the FAQs in order to get answers to their queries related to library matters. The screenshot of FAQ of university of California Berkeley library http://www.lib.berkeley.edu/kb/ is given below:

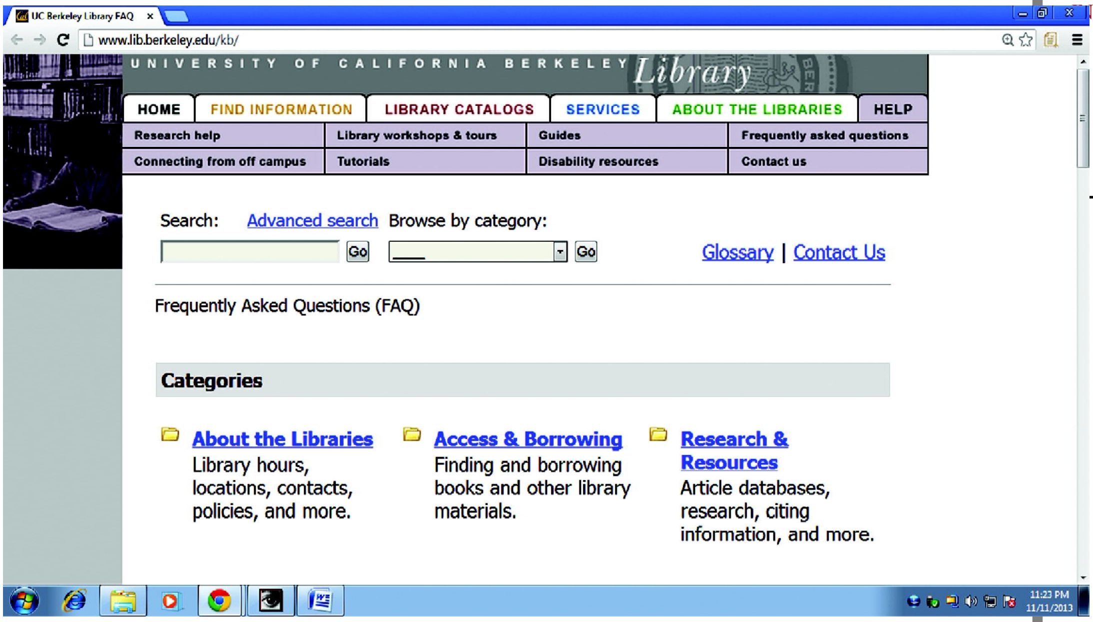

Fig. 14.2 : The screenshot of FAQ of university of California Berkeley library

14.6.8 Reader Advisory Service

Libraries also offer advisory services to the readers including online book lists and recommendations. This service provides users with information they need to select a book. It is a value- added service, and matches the user with the right book (3rd Law of Library Science).This service is actively provided by public libraries for promoting fiction books. This service may also be provided in academic libraries to help the new researchers who want to deepen their knowledge in a particular field. In order to offer this service, the reference staff should know about the availability of various titles in any given field. They should be thoroughly familiar with the library's collection. The reference personnel should be able to convey their suggestion or opinion in a friendly, polite and conversational manner.

14.6.9 Web 2.0 tools

Web 2.0 tools are web- based facilities which allow users to gain access, contribute, describe, web- mediated content in various formats, such as text, video, audio, pictures and graphs. Some of the Web 2.0 based popular websites are Flicker which can be used to share Photos, YouTube for sharing videos, Last.fm for sharing audio, and MySpace for sharing text-based information. These sites allow users to create, describe, post, search, collaborate, share and communicate online content in various forms. Libraries use Web 2.0 tools for imparting information literacy to the users.

Libraries can use blogs as promotional tools to inform clients about changes, additions and other developments in library services and collections. Libraries share pictures, events and instructions by using podcasts and vodcasts. Libraries are also actively embracing the use of these tools for serving the users and attracting the potential users. These tools help libraries in offering their resources and services to their users in a proactive way.

IM (Instant Messaging) and SMS (Short Text Messaging)

Instant messaging allows online communication between two or more people using text based short messages via the web in real time. The reference staff may answer ready reference questions, directions or policy related queries through IM and SMS. The reference staff is required to be very brief and to the point while responding to the instant messaging (IM) & short text messaging (SMS) queries. If an answer to a query is long, the staff may ask the user to give an e-mail address and give him more information on the topic in context or encourage the reader to visit the library. The users find IM and SMS helpful for their convenience, anonymity and quick help. Academic libraries use IM to provide virtual reference services, improve access to other services and provide the latest information to the users. It also acts as an additional medium to facilitate interactions with users.

14.6.10 Creating Finding Tools and Websites

The reference staff creates finding tools and pathfinders for library users. The libraries prepare pathfinders for very common queries raised by the students. The pathfinders may assist and guide the users in selecting and locating appropriate reference source, pertinent databases, search terms, authoritative current websites, and tips for searching the OPAC for any other additional material.

14.7 ADVANTAGES OF COMPUTERIZED SERVICES

a) Speed

Searching electronic databases is much faster than their print counter parts. These databases offer current as well as retrospective searching. Sitting at the computer terminal one can retrieve current as well as retrospective records speedily.

b) More Search Options

Search options provided by e-databases are far more extensive than those available in their print counter parts. In printed sources the searching is limited to the indexes (such as author, subject, keywords, etc.) provided by the print

publication. In e-databases, one can search by any field like year of publication, journal title, keywords, author, etc. In addition, these databases offer more search options, such as **keyword or phrase search** (one can search by single term or by phrase comprising more than one term), **Boolean search** (using Boolean operators like And, Or, Not), and **Truncation search** (one can search all different forms of a word having same root).

Similarly, more search options are provided in OPAC than the card catalogue. In addition, OPAC can be used by more than one user at a time, user can reserve a book and send a request for purchase of a new book remotely, without visiting the library.

The screen shot of OPAC http://jnuonlinecatlog.jnu.ac.in:8000/cgi-bin/gw/chameleon?sessionid=2013030311235118362&skin=jnu& of Jawaharlal Nehru University Library is given below:

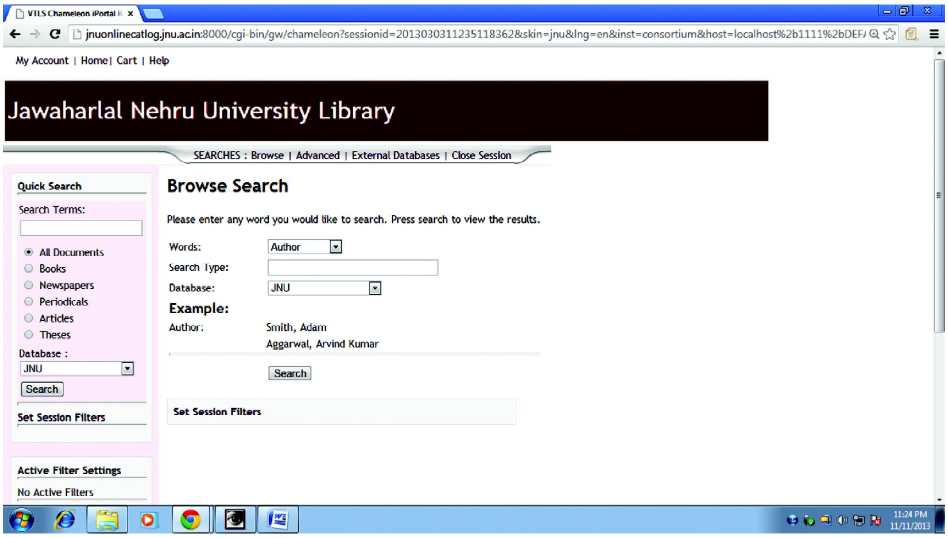

Fig 14.3 : The screen shot of Online Public Access Catalogue

c) Easy Availability and Accessibility of Data

Users can search library resources remotely. Searching e-databases and retrieving information is less time- consuming than searching their print counter parts. E-databases provide easy availability and accessibility of data.

Similarly, computerization leads to decentralized access to records. The users can check through Web OPAC the availability of a book in a library whether a book has been loaned out to any user. They can even reserve a book online as per their need. Similarly, a member of the library staff in the main library may check the availability of a book or any other record without visiting the library.

d) Integration of Data

The Table-of-Contents service of many libraries provides links to full-text electronic journals and articles within journals, for browsing as well as for printing. Providing full-text links to resources is most important value- added service provided by modern libraries.

INTEXT QUESTIONS 14.4

1. Define digital reference service.
2. What are Web 2.0 tools?
3. State the advantages of OPAC.
4. List out the advantages of computerized library services.

14.7 ROLE OF LIBRARIANS IN THE INTERNET AGE

There is a general feeling or apprehension among the experts that the role of librarians will be insignificant in the Internet age. This apprehension is totally unfounded, in fact, their roles will not diminish in Internet age, provided they learn and evolve themselves. The Librarians have to know and use new tools and technologies in order to provide user- centric services. They are expected to provide services beyond the four walls of libraries, wherever and whenever the users need them. This can be easily done if the librarians are prepared to learn and implement new tools and technologies in their day- to -day work.

There is a phenomenon of information deluge which means that there is too much of information and the users are overwhelmed with it. At this juncture, the librarians have to play a significant role. They are required to tell the users that everything available on the Internet may or may not be reliable. They have to teach the users how to navigate the Internet and evaluate the quality of information which they find. The librarians have to use their skills to be the gate keepers of essential knowledge, to guide users through an ever- expanding on- line world. They are also expected to perform an active role in creating, promoting and implementing new models of scholarly information diffusion such as institutional repositories, ETDs, etc.

In this Internet age, the librarians are cyber guides besides being the custodians of knowledge. They are required to:

- Act as value- adding information professionals,
- Adopt and integrate digital services with traditional ones,

- Have good negotiation skills. They have to negotiate with vendors in order to finalize the license of e-journals, online databases for remote access; make consortial agreements for economical subscription prices.
- Have the skills to convince authorities to grant funds for digital projects,
- Know the latest technological developments and be knowledgeable enough to know how to harness the potential of technological tools for providing efficient services to the users,
- Ensure access to e-resources both on- site and off- site. They should know about different print and online resources and have the skill to develop and maintain a sound collection keeping in view the objectives of the parent organization,
- Develop a close working relationship with the users for providing individual and personalized services,
- Use web 2.0 tools like blogs, podcasts, vodcasts for providing services and connecting to the users,
- Arrange, procure, organize and maintain content in alternate formats for visually- challenged users. They should also ensure that the library as a physical place is accessible to the physically- challenged users,
- Have good interpersonal skills in order to work with others in an amicable manner, and
- Have good managerial and communication skills. They should be able to analyze, take judicious decisions, and know when to look for guidance. They have to promote their services among the users. They should know how to communicate with the users and satisfy them with their services,

Thus, it can be seen that librarians have a challenging role to play in the Internet age. Their role is not static, but is constantly evolving with time and strides of the technological developments. Librarians will have a major role to play in future, no matter how much advancement in technology takes place. As technological development can never become a substitute for the "human interface" provided by the librarians.

WHAT YOU HAVE LEARNT

- The advent of Internet has completely changed the way libraries function. Earlier they focused on collection development, now they are more concerned with connecting and communicating with the users.

- Earlier libraries were considered storehouses of books and other reading material and librarians as custodians, whereas now the libraries are concerned with providing access to the users where and whenever they want to.
- Librarians are no longer custodians but are guardians and purveyors of knowledge who use the new tools and technologies to augment their services towards the users.
- The manual services have been replaced by computerized ones which have proved speedy, prompt and cost effective in nature.
- A modern library is a social organization which uses technologies to offer information services to its heterogeneous population on a 24X7 basis as and when they need them. It does not limit itself to offering "place - based services."
- The roles of librarians will not diminish in the Internet age, provided they learn and evolve themselves.

TERMINAL QUESTIONS

1. Discuss the characteristics of a modern library.
2. Describe the role of the librarian in the Internet age.
3. What are web 2.0 tools? How can they be used for promoting library services?
4. Discuss the necessity of modern library services.
5. What are the advantages of computerized library services?

ANSWERS TO IN TEXT QUESTIONS

14.1

1. A modern library is a social organization which uses technologies to offer information services to its heterogeneous population on a 24X7 basis as and when they need. It does not limit itself to offering "place- based services."

14.2

1. The services which are provided or delivered to the users without using computers as an intermediary are known as manual services. Whereas computerized services are offered by using computers as tools or intermediaries. The computerized services are offered to the users through the Library management software (LMS).

14.3

1. Libraries form an association or network or cooperative organization to procure and share resources and services. These associations or networks are commonly known as consortia (consortium: singular).

2. Remote access is the ability to get access to a computer through a network located distantly.

14.4

1. Digital reference service is e-reference service, where users employ computers or other Internet technology to communicate with reference staff, without being physically present. Communication channels used in digital reference are chat, videoconferencing, e-Mail, voice over IP, or Instant Messaging. It is also known as virtual reference service, online reference and remote access reference.

2. Web 2.0 tools are web- based facilities which allow users to gain access, contribute, describe, web- mediated content in various formats, such as text, video, audio, pictures and graphs.

3. More search options are provided in OPAC than the card catalogue. OPAC can be used by more than one user at a time. The user can reserve a book and send a request for purchase of new books remotely, without visiting the library.

4. Advantages of computerized services are:

   - Speed
   - More Search Options
   - Easy Availability and Accessibility of data and
   - Integration of data

GLOSSARY

- **Assistive technologies:** It is a term which refers to assistive, adaptive rehabilitative devices, products or equipment for helping people with

disabilities. These improve, increase and maintain the functional capabilities of persons with disabilities. The assistive technologies assist the individuals in communication, education, work and recreation, helping them to achieve greater independence and enhance the quality of life.

- **Current awareness service (CAS):** It is a service designed to alert users to new developments in a particular topic or issue; an example is a service which distributes the contents listings of journals.
- **Database**: It is a collection of records with details of different data items- which may be numeric, textual or image- based. It is usually searchable.
- **Electronic journal:** It is a journal which is produced in an electronic format; sometimes the electronic equivalent of a paper based journal. Examples are Ariadne and Cell.
- **Frequently Asked Questions (FAQs):** This is a file of commonly asked questions with answers about a particular topic or issue. These serve as a source of help information for www sites and pages.
- **Information literacy:** It is defined as a set of abilities enabling individuals to identify when information is needed and have the capacity to locate, evaluate and use effectively the needed information. In simple words, it means teaching the users how to access the card catalog or OPAC, print resources, and retrieve information from online databases.
- **Internet:** It is a worldwide network of interconnected computer networks connected together using recognized standards to enable electronic communication and the exchange of information.
- **Podcast:** It is a kind of digital media file consisting of audio, video, PDF, or e-Pub file that can be downloaded directly from a streaming Internet onto a computer or a mobile device.
- **Radio Frequency Identification (RFID):** It is the wireless non-contact use of radio-frequency electromagnetic fields to transfer data, for the purposes of automatically identifying and tracking tags attached to objects.
- **Search facility:** It refers to any tool or facility which can be used to search information which is accessible via Internet; this includes search engines, library catalogues and online databases.

- **Union catalogue:** A union catalogue is a combined library catalogue which describes the collections of more than one library.
- **Vodcast:** Video stored in digital form that can be downloaded from the Internet on to a computer and MP3 player.

SUGGESTED ACTIVITIES

1. Visit any library in your vicinity and write about its collection and services.
2. Visit the website of any library of your choice and write about the web2.0 tools it has used. Find out about the online resources it subscribes to.
3. Visit any library in your vicinity. Write about any two manual and computerized services which it offers.
4. Visit the website of any library and capture the screenshot of its OPAC.

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15

LIBRARY SYSTEM AND MANAGEMENT

15.1 INTRODUCTION

Let us understand library as a 'system'. You must have seen various existing systems, like political system, economic system, social system, education system, etc. We, the human beings, are a biological system which has many sub-systems, like, digestive system, blood circulatory system, respiratory system, etc.

A system is a set of connected parts/components forming a complex whole. It contains entities, namely, men, machines and materials. These entities are integrated to serve definite purpose and objectives. The system components are inter-related, inter-dependent and have effect on each other as a whole. Thus a library is also a system and its various sections/divisions are its components.

The primary objective of any library system is to collect, store, organize, retrieve and make available the information sources to the information users. A library, as a system, is a subsystem of some super-system (an organization in any field, whether education, research or social service). It has its own subsystems, such as, acquisition system, circulation system, administration system, etc.

In this lesson, you will learn library management and the role of library as a system.

15.2 OBJECTIVES

After studying this lesson, you will be able to –

- define library management;

- identify functions of library management;
- list various structural components of a library system; and
- explain functioning of various sections of a library, viz. Acquisition Section, Technical Processing Section, Circulation Section, Reference Section, Periodicals Section, Maintenance Section, and Administration & Finance Section

15.3 LIBRARY MANAGEMENT

Library Management is the adaptation of the principles and techniques of management to the library situation. It includes decision making and getting the work done by others. The five fundamental management functions are: Planning, Organizing, Staffing, Leading and Controlling.

15.3.1 Definition

Libraries have an important role to play in facilitating access to information for learning, education and training. It is a known fact that a well-managed library is a successful library. The library management means efficient and effective management of material (information sources), machinery, men (human resource), technology and money to meet the objectives of the library. Thus, librarian as manager performs all the functions of manager/administrator.

15.3.2 Functions

Henry Fayol (1841-1925) expounded the principles and practices of management in their modern context. Fayol devoted his attention to the study of managerial activities, and identified the basic and universally applicable five functions (applicable to library management also), such as,

a) Planning

b) Organizing

c) Commanding

d) Coordinating

e) Controlling

Planning: Planning includes formulation of goals, objectives, decision making for future, strategies, policies, and effective planning.

Organizing: Organizing includes departmentation, line and staff functions, decentralization, committees and group decisions, and effective organizing.

Staffing (Commanding): It includes selection, job description, appointing personnel, appraisal, developing library managers and organizational development.

Leading (Coordinating): It deals with human factor, motivation, leadership, and communication.

Controlling: It includes system and process of controlling, control techniques, control of overall performance, and effective managing.

15.3.3 Elements of Management

In 1937, social scientists Luther Gulick and L. Urwick described seven "major activities and duties of any chief executive". Since then, the acronym POSDCORB is used to describe the 7 functions of managers referred to as the 'Elements of Management'. The acronym POSDCORB stands for: Planning, Organizing, Staffing, Directing, Coordinating, Reporting, and Budgeting.

Planning

Planning is working out in broad outline the activities that need to be done and the methods for doing them to accomplish the purpose set for the organisation.

Organizing

Organizing is the establishment of the formal structure of authority through which various sections or divisions of the organisation are arranged, defined and coordinated for the defined objective.

Staffing

Staffing is the whole personnel function of bringing in and training the staff and maintaining favorable conditions of work.

Directing

Directing is the continuous task of making decisions and embodying them in specific and general order. It involves giving instructions by the top personnel and serving as the leader of the library.

Coordinating

Coordinating is the all-important duty of interrelating the various aspects of work in an organisation.

Reporting

Reporting is keeping those to whom the librarian is responsible informed as to what is going on. It, thus, includes keeping authorities, subordinates and users informed through records, reports, etc.

Budgeting

Budgeting refers to work related to budgeting in the form of fiscal planning, accounting and control.

The above mentioned seven elements of management are considered to be the core of management process. These essentially refer to the various steps or stages involved in running a typical information organisation.

INTEXT QUESTIONS 15.1

1. Explain library as a system.
2. What are the fundamental functions of management?

15.4 COMPONENTS OF A LIBRARY SYSTEM

Ranganathan visualized library as a trinity of:

(a) Readers

(b) Books, and

(c) Staff

Here, the books are the knowledge containers, readers are the knowledge seekers, and staff means the facilitators or providers of various library services to the users, the knowledge seekers. Whenever and wherever this Trinity exists, a library is born. A library exists when the three components of its trinity – the readers, the books and the staff – are in purposive contact with each another.

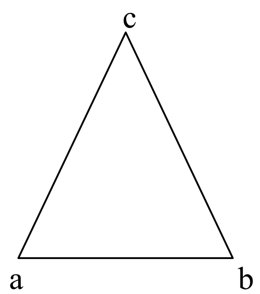

Fig. 15. 1: Illustration of the trinity

In the above Triangle,

angle 'a' refers to Universe of Knowledge Seekers,

angle 'b' is Universe of Knowledge Containers, and

angle 'c' at the top is Universe of Facilitators

A library is referred to as a 'social institution' and a 'service institution', which serves the current as well as life-long learning needs of the society. In the Trinity,

(1) The universe of knowledge containers include information sources in various formats (print, non-print and electronic media),

(2) The universe of knowledge seekers include various groups in society (children, women, students, teachers, researchers, patients in hospitals, prisoners in jails, and others), and

(3) The universe of facilitators (library staff) include providers of various library services (technical services, users services, and others).

The library provides 'perpetual self-education,' 'life-long self-education' and 'universal self-education'. Education and learning is a life-long process. The schools/class rooms provide the initial momentum. Thereafter, it is the library system which serves the necessary aids to perpetuate self-education for all.

INTEXT QUESTIONS 15.2

1. Explain the components of library system.
2. 'Library provides perpetual self-education'. Explain.

15.5 SECTIONS IN A LIBRARY

A library performs a number of specialized activities. Based on each specialization, the library work is divided into various sections. Let us know about the functions of the sections in a library. Library jobs performed in various sections are also presented in Fig. 15.5 in the form of an organizational chart.

15.5.1 Acquisition Section

Every library has to build up a collection of information sources (knowledge containers). These may be in print or non-print or electronic formats. Functions of Acquisition Section include selection, ordering, receiving supplies, making record entries in the stock register (Accessioning) and processing the bills for payment.

Acquisition of library material has three main check-controls, namely, (1) Availability of library fund, (2) use of reading material, and (3) need of library users.

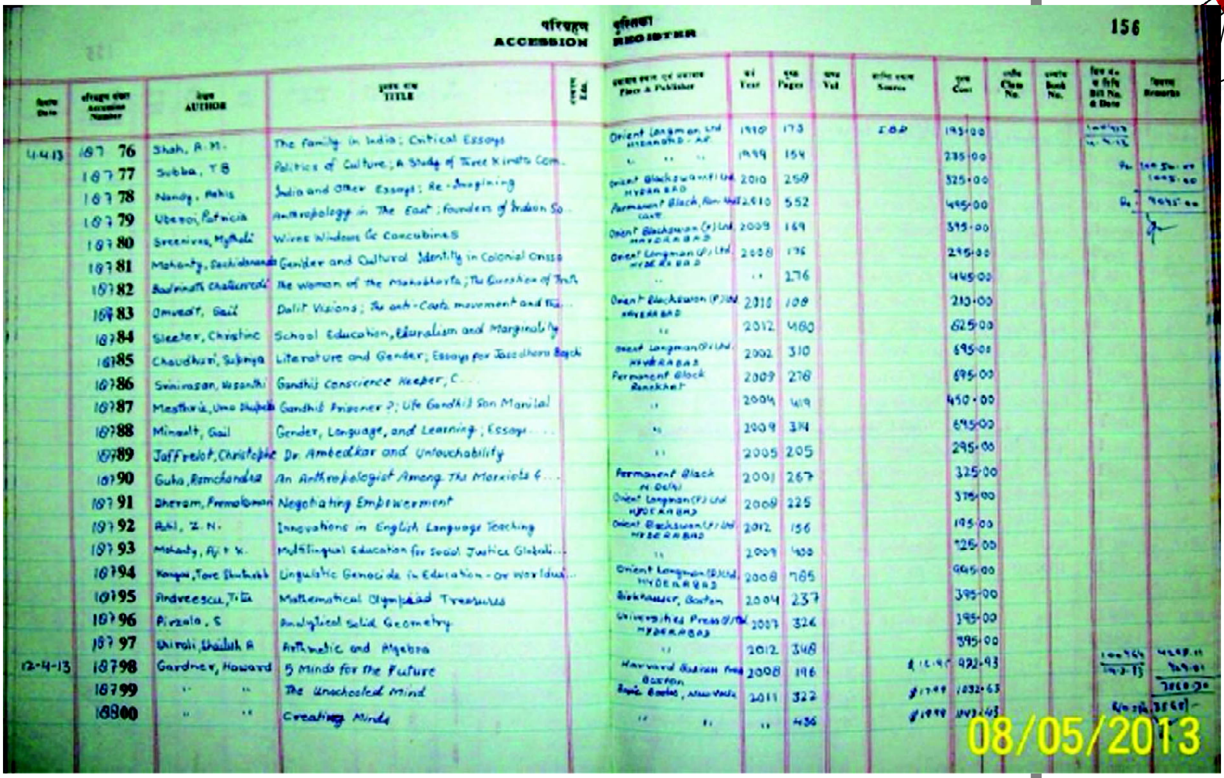

Fig.15.2: Sample pages of an Accession Register

15.5.2 Technical Processing Section

The newly acquired books are prepared for library use. For this purpose, these are classified, catalogued, entries filed in library catalogue and books shelved on display racks or in the stacks. As a visitor to library, you may not be familiar of such functions in a library, because these are performed behind the scene.

15.5.3 Circulation Section

This Section deals with membership work, issue and return work and work related to users' requirements. Generally, a specially designed circulation counter is used for doing circulation work. You are very much familiar with this section, as you use the services of circulation section frequently for borrowing and returning of the books. Fig. 15.3 shows the circulation counter of a library.

Fig.15. 3: A Circulation Counter

15.5.4 Reference Section

Reference Section collects and organizes a number of reference books. Reference book is one which is not read like text book from beginning to end. You refer to a reference book to know the answer of your specific query. This may pertain to a word, term, person, place, concept or subject. You need to consult a dictionary, thesaurus, directory, year book, encyclopedia, or such other type. The reference librarian is expected to provide right information to the right person at the right time.

15.5.5 Periodicals Section

Periodicals Section collects and organizes a number of periodical publications (such as, a journal, magazine, newspaper). A book is one-time publication, published once whether in its first edition or revised and subsequent editions. Whereas, a periodical publication (serial publication) is published in continuity and with predefined periodicity (such as, daily, weekly, fortnightly, monthly, etc.). A library first receives the current issues of the volume of a periodical publication. Later on, the completed volumes may be got bound and shelved in the Periodicals Section. The current issues are displayed in specially designed Periodical Racks as given in Fig. 15.4.

Fig.15.4: A Periodical Display Rack

15.5.6 Maintenance Section

Maintenance work is the backbone of any object, structure, organization, institution and so much so, in a library also. You already know that after buying books or stationery or computer, you have to take special care of your possessions for their proper and prolonged use. In a library, Maintenance Section is responsible for jobs such as organization of collection, shelving and re-shelving, dusting and cleaning, mending and binding, weeding and stock verification. Much of the work done in Maintenance Section is behind the scenes which helps to keep the collection live and presentable for maximum use. These activities are described in brief as follows:

Organization of Collection: A library takes into consideration the nature of material and its use, and accordingly it organizes its collection, such as, Main (General) Collection, Periodicals Collection, Reference Collection, Non-Print Material, including electronic material, etc. Books in all such collections, besides the Main Collection, are allotted a symbol for the type of collection, which is put at the top of the call number of the item.

Shelving and Re-shelving: All the items as reading material are arranged on shelves in a helpful order. The items used by users are to be re-stored (re-shelved) in their proper position on the shelf.

Dusting and Cleaning: Dust and dirt, which accumulates on the items on shelves, are to be removed regularly at periodical gaps. Dust-free and well maintained library material not only attracts the users, but also enhances its use.

Mending and Binding: At times, the items in the collection suffer minor or major damages. These are to be repaired. Mending is done for minor damages

and binding is done for major damages to the documents. With the help of mending and binding the damaged items get renewed life.

Weeding: Weeding is required for all such items which can no longer be put to use due to damage beyond repair or have become outdated.

Stock Verification: When the library collection is put to maximum use, particularly in open access, some items are lost. These lost items create a great amount of problems for the users and the staff. An item lost shows its presence in the library catalogue and other records, but is not found on shelves. To identify the lost items, stock verification of library materials required. Stock verification helps in finding out **'what is'** as against **'what it was'** in the library collections. After such findings, the library records are to be updated in view of the records of lost items. This helps smooth flow of library use and library services.

15.5.7 Administration & Finance Section

The purpose of the Administration Section is to promote those activities which relate to library administration and management issues in general. The section is intended to serve the needs of library staff especially whose who supervise other staff. It helps manage operations of other sections of the library. In large libraries, the administration and finance section are two different sections. But in small and medium sized libraries, these are handled within one section.

The Administration and Finance Section maintains the record of policy decisions, rules and regulations, guidelines and norms for working. This section maintains the records of office files, diary and dispatch, library budget proposals, budgetary allocations, accounts of library expenditure, stock registers, and such other purposeful records. It helps in taking care of library building, furniture, equipments, water and electricity fittings, and such sundry matters

15.5.8 Important Observation

It may be kept in mind that in a big library (university library, research library, state central library) functioning of all such sections, as described above, are visible. A big library may have some additional sections (e.g., children section, audio-visual section, computer section, etc.) as per some specialized library work or services. But, in a small library (school library, small public library) such sections are not visible, though these functions are perfomed by a librarian single-handedly.

An organizational chart showing the activities of different section is given in Fig. 15.5

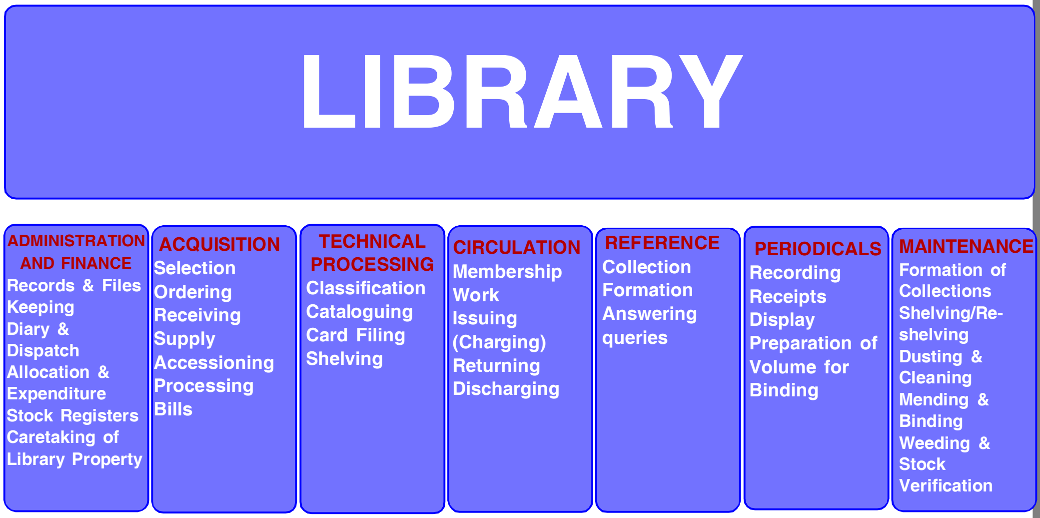

Fig.15.5: An Organisational chart of a Library showing activities of each section

INTEXT QUESTIONS 15.3

1. List the various sections of a library.
2. Explain the need for circulation system in a library.

WHAT YOU HAVE LEARNT

In this lesson you have learnt:

- Definition and examples of 'system', which is complex whole with entities to serve a purpose and has inter-related and inter-dependent components.
- Library works as system, is a sub-system of some super-system and is having its own sub-systems.
- In library management, all principles and techniques of management are applied. Library Manager performs all the five basic functions of Manager.
- Components of library system are described. Library is a Trinity of (1) Universe of Knowledge Seekers, (2) Universe of Knowledge Containers, and (3) Universe of Service Providers. It provides perpetual and life- long education.
- Sections in a library are: Acquisition, Technical Processing, Circulation, Reference, Periodicals, Maintenance, and Administration & Finance. Each Section performs specialized library activities.
- Main jobs are done by professional library staff in different sections in a big library, and by a single librarian in a small library.

TERMINAL QUESTIONS

1. Define library as a system, giving its objective and set of entities.
2. Elucidate the concept of library as a 'trinity'. Give suitable examples.
3. Define library management. Enumerate various fundamental functions of library management.
4. State in brief, the jobs being done in different sections of a library.

ANSWERS TO INTEXT QUESTIONS

15.1

1. Library is a sub-system of some super-system. Its primary objective is to collect, organize, retrieve, and serve the information needs of knowledge seekers.

2. The five fundamental functions of management are planning, organizing, staffing, leading and controlling.

15.2

1. A library is a trinity of books, readers and staff. A library system aims at serving the information needs of knowledge seekers by performing various library activities.
2. Man learns throughout his life, from birth to death. Other educational institutions provide education for a limited period, but the library perpetually helps the learner and thus provides life- long education.

15.3

1. A library has many sections, such as, Acquisition, Technical Processing, Circulation, Reference, Periodicals, Maintenance, Administration & Finance. Each section performs a set of specialized library activities.
2. The Circulation Section deals with membership work, issue and return work, reservation of documents and such related jobs. Generally, a specially designed circulation counter is used for doing circulation work.

GLOSSARY

Accessioning: Items purchased are recorded in Accession Register (Stock Register) and the activity is referred to as accessioning.

Call Number: It is the combination of Class number, Book number, Collection code and Copy number for deciding unique position of each and every document on the shelf.

Collection Formation: A library organizing its resources in to different collections as per the use or nature of the material.

Facilitators/providers: The staff working in the library facilitates and provides library services to users.

Information source: Information sources in print or non-print media, also known as Knowledge Containers.

Life-long self-education: Learning and teaching (education) process essentially attached with human life.

Mending: Repairing a slightly damaged printed resource.

Reservation work: To reserve a book in circulation for a new user needing it.

Re-shelving: Restoring a used item back on shelf in its proper position.

Technical processing: It includes, classifying, cataloguing and arranging items in a helpful order.

Trinity: Combined form of three elements, Books, Readers and Staff combined together make Trinity of Library.

Weeding: In this process the unserviceable items are sifted from live collection.

WEBSITES

http://en.wikipedia.org/wiki/Henri_Fayol

http://en.wikipedia.org/wiki/POSDCORB

http://www.reference.com/motif/science/different-sections-of-the-library

http://wiki.answers.com/Q/What_are_the_different_sections_of_a_library

16

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LIBRARY STAFF

16.1 INTRODUCTION

Human resources are the most vital resource in any service organisation. Similarly, well-informed library staff is one of the greatest assets of any library. Most of the libraries put lot of efforts into defining the competencies, i.e., skills, knowledge, attitudes, and behaviour, necessary for library staff to provide best services to their users. The staff thus constitutes the most vital resource of any library. This resource is primarily responsible for transforming all other resources into valuable products and services. It is, therefore, necessary to build up this resource with great care and attention.

Different categories of staff, at various levels, are required to operate several functions of a library. In this lesson, you will learn the processes involved in building staff strength of a library.

16.2 OBJECTIVES

After studying this lesson, you will be able to:

- recognize the staff of an information organization as a vital human resource;
- explain requirements of staff in Academic, Public and Special libraries;
- list the categories of library staff and explain their functions;
- outline a staffing framework on basis of activities of the libraries;
- identify different types of staff required for a library;
- list various stages of recruitment process; and
- describe the evaluation of staff performance at all levels.

16.3 STAFFING

In lesson 15 of this module, you have learnt the seven elements of management. Here, we will discuss staffing, the most necessary element of management.

Staffing includes manpower planning that determines the quality and quantity of employees of libraries. This exists at all levels in relation to size and scale of operations of a library. Staff of the library is not only a vital resource but also an invaluable asset. It is the live human resource that uses all other resources optimally to achieve the goals and objectives of a library. The performance of the staff is entirely dependent on the quality of the staff. Building up the staff strength, therefore, should be given the highest attention. It involves a series of steps as given below.

- Manpower planning that determines the quality and quantity of employees of a library, at all levels in relation to its size and scale of operations
- Recruitment and Selection
- Employment and Induction
- Roles and Responsibilities
- Performance Appraisal
- Staff Training and Development

16.3.1 Manpower Planning

Manpower planning is concerned with employing persons for performing various activities of libraries. Its objectives are to ensure that right persons are employed for different positions at the top, middle and lower levels of management. It is, therefore, necessary to determine the categories of staff and their number(s) required at each of the three levels. At each level, functions, duties, responsibilities, authority, etc. are different and varied. Hence, competent persons with appropriate qualifications and years of varied experience, should be employed to obtain the best results.

The staff employed for a library can be categorized into 4 groups as given below :

- Professionals
- Semi professionals
- Non-professionals
- Support staff

Notes

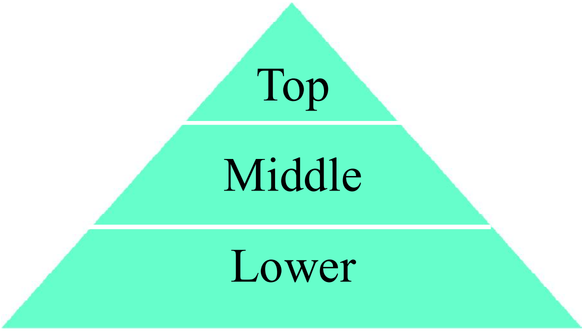

Fig 16.1: The Three Levels of Management

16.3.1.1 Professional staff

The categories of staff to be employed in the libraries are usually at the three levels of management as indicated in the above figure. Their functions, responsibilities, authority, etc. are explained below:

At the top level, qualified library and information professionals are required. They are usually professionals with experience. They carry out functions in various roles, hold responsibilities and are in a position of authority. They are involved in planning, policy and decision making. They set procedures and practices of functions and operations of a library, exercise control and discipline in the library. Designations of this level may vary, but in general, there would the Chief or a Deputy librarian(s) functioning at the top level.

At middle level, assistant librarians and many of the senior professional assistants function. They usually take care of the technical activities. They also act as a link between the top and the lower level.

At the lower level, junior professional assistants and semi-professionals function.This level takes care of the various routine activities of the library.

The number of professionals at the top level are few in number, more at the middle level and many more at the lower level. This depends on the size of the library in terms of its collection strength, various activities and number of users.

16.3.1.2 Semi-professional staff

The semi-professional staff of the library are engaged in performing library routines and techniques under the guidance of the professional staff. They are personnel with training in library science usually a diploma or certificate in library and information science (LIS). Their designations may be library assistant, technical or professional assistant, junior cataloguer or equivalent. They usually perform the routine professional and technical activities. In many

libraries, this category of staff works as support to professional activities under the direction of a senior professional.

16.3.1.3 Non-professional staff

Non-professional staff may be subject specialists, computer hardware and software technologists or other technical experts, appointed for specific purposes for shorter duration. They may not form part of the regular staff. Their role is advisory and they are not assigned or entrusted with any managerial or routine responsibility. They function under the supervision and control of the Chief Librarian and occasionally under Deputy Librarians, depending on the department/ section they serve. Only in large libraries with a number of functions, non-professional staff may be employed permanently.

16.3.1.4 Support Staff

Support staff usually comprises of administration and accounts personnel, who take care of the office functions, such as personnel, purchase and store, office maintenance, and similar other responsibilities. Besides this, staff is also required for cleaning work, sanitation, security, gardening, driving vehicles, etc. This staff has the respective appropriate qualifications and experience related to their nature of work.

INTEXT QUESTIONS 16.1

1. What do you understand by staffing?
2. Elucidate various steps in manpower planning?
3. Describe the three levels of management ?
4. List the various categories of staff?

16.3.2 Recruitment and Selection

Recruitment is the second step in the process of building up the staff strength of a library. Usually the recruitment process starts with advertisements in daily newspapers, employment news publications, professional periodicals and on internet. Applications are invited from suitable candidates in a prescribed format. At times, TV channels and radio broadcasts announce news/information on jobs and positions for an organization.

In general, the applications in a prescribed format are required for the sake of convenience of screening and scrutinizing. Usually, advertisements seek data

related to the applicants, i.e., name, age, contact address, telephone number, e-mail id, academic and professional qualifications and prescribed years of experience for the posts. The advertisements carry the name(s) and/or designation of the vacant position(s), job description, number of posts, salary scale and total emoluments, terms and conditions of service, last date for the receipt of applications, etc. Sometimes career prospects are also indicated.

Registrations by persons seeking jobs in employment exchanges of government, private placement services are other means through which persons can be recruited by organizations.

Libraries of academic and research institutions usually follow the conventional patterns of recruitment procedures, except under special conditions of recruitment for senior positions. Libraries attached to smaller institutions follow their own respective general recruitment practices of the parent organizations for filling up positions in libraries. Public libraries under government follow their usual procedures of recruitment.

16.3.2.1 Selection

Selection of suitable candidates for specific positions in all types of libraries deals with identifying and matching right applicants with the requirements of positions to be filled. Screening and short listing applicants for personal interviews are the next step. For positions at the middle and lower categories, written tests may be conducted to filter applicants before making the final list of persons to be called for personal interviews.

16.3.2.2 Personal Interview

The candidates who are shortlisted are called for interview to assess their personality in terms of attitude, aptitude, approach, communication skills, behaviour and other traits that ensure the candidates 'suitability for the position. For senior level positions, besides qualifications, the candidate is judged on the basis of individual's ability to lead, take decisions and work in coordination with the junior staff. For the top position, i.e., to head the library, candidates, at times, are required to make an oral or a formal presentation on a topic of current interest.

16.3.3 Appointment and Induction

The selected candidates are issued appointment letter, according to their placement in the selected panel with all terms and conditions of employment.

The next important aspect is to make the appointed candidate feels that he/she has joined the right organization. This is termed as 'induction' which refers

to inducting the candidate into the organization that he/she has joined. The person is introduced to other staff members at various levels. Rules and regulations of the organization, duties and responsibilities, discipline, etc. are aspects that the appointed persons should know from the beginning. The induction responsibility is usually assigned to an experienced professional at middle level to make the new employee feel at home in the new organization.

Orientation of new entrants is required not only to the immediate environment but also to the whole organization's activities, functions, culture, etc.

16.3.4 Roles and Responsibilities

The top level person, usually the chief librarian should have the highest professional and academic qualifications with experience, abilities and competence to set achievable goals and objectives. He should have ability to set targets to be obtained in a particular period, establish measurable standards and norms for every operation, exercise authority and enforce discipline.

The middle level persons, should have the professional and academic qualifications with experience to operate as heads of departments. They should be able to get the different operations executed efficiently to achieve set targets.

The lower level staff should be more in number compared to middle level, who should perform at operational level which includes routines and repetitive duties related to various work tasks.

Each of the above levels of staff must perform at the highest performance level as per standards to ensure the expected results.

The main functions of almost every library are:

- Collection development (Acquisition)
- Technical processing (Classification and Cataloging)
- Circulation of documents
- Stack room maintenance
- Maintenance of readings rooms
- Display of selected reference books for consultation and use
- Reference and Information services
- Office management

The staff is distributed to these units, taking into account the attitude, aptitude, interest and experience of the staff while allocating different duties and

responsibilities. This is to ensure not only best performance by the staff but also to their satisfaction.

Every position in an organization and the person who functions in that position has a role to play in achieving the targets set in tune with the goals and objectives of the organization. Appropriate duties with responsibilities and the necessary authority to execute the operational functions are assigned to every supervisory position. Authority and responsibility should go together.

A library primarily is a service-oriented organization and the users are its customers who should be served just as a business house handles its customers. The library, therefore should give the highest priority to customer satisfaction. Every department of a library and its sub-divisions must keep this as a basic principle and duty, to serve the users of the library. Even the housekeeping activities such as collection development, technical processing that do not have any direct contact with users, must understand that the library functions for the satisfaction of users which is its primary goal. Everything they do will have a direct bearing on the use of the library. The technical processing division, should focus attention on the library catalogue as a reliable user guide. These policy decisions will help the service divisions of the library in projecting the image of the library as an excellent service center.

The staff in service units, having direct contact with users, have to be ready for users of all temperaments. At times, there may be provoking situations that may result in their patience being tested. For instance, a privileged user, may sometimes seek special concessions for a liberal extension for returning a book which is in great demand, or seek exemption for non-payment of overdue charges, or a reference book to be lent and so on.

INTEXT QUESTIONS 16.2

1. List the steps in recruitment procedure.
2. Why is induction necessary?
3. What is the need of public relations characteristics by service staff of a library?

16.3.5 Performance Appraisal

The library and information service activities are not one-time activity but are continuous ones. The performance of the library staff at all levels has to be assessed periodically to keep the staff strength at optimum efficiency. Their future growth and development is also an important aspect. This assessment

is known as performance appraisal, irrespective of the position of the staff in every organization. Performance appraisal is measurement of performance and efficiency of every employee with regard to their assigned duties and responsibilities. There are norms and standard yardsticks designed to assess the performance efficiency at optimum levels for every type of work. While it is much easier to measure quantity of work done, measuring quality of work is far more complex.

In libraries there are many tasks that can be quantitatively measured such as items of documents classified, catalogued, shelved and serviced, number of documents issued during a day and so on. But how well these jobs are done is a qualitative assessment.

Performance appraisal is not only important but also intricate for developing appropriate yardsticks, particularly in the changing context of information work and services. It is indeed necessary that performance strength of the staff has to be constantly and systematically enhanced to reach the highest level of efficiency and user satisfaction.

16.3.6 Staff Training and Development

Staff development is an essential activity to keep performance at the maximum level in the present and in the future. The staff at all levels are required to keep their professional knowledge, technologies, techniques constantly updated. Staff development implies acquisition of new knowledge in areas of relevance in the work situation. This enhances the capacity to perform at a higher standard of efficiency. Education and training at all levels are necessary without distinction of position or activity. In large information organisations, training and development are an in-built activity.

16.3.6.1 Training

In-house training is necessary for the new employees to enable them to be part of the new organization and blending them into the organizational environment. Existing employees very often get in-service training within the organization by senior staff this is to provide them hand-on experience on the assigned job as well as get exposure to other jobs so that they can work if they are transferred from one section to another.

Short duration programmes on new techniques and application of emerging technologies are offered by professional associations and other institutions. These courses are useful to those who wish to acquire new skills or update their knowledge in the fast changing fields.

Workshops, seminars and conferences organized at national and international levels by professional organizations are another method of staff development. This provides opportunities for staff at all levels to interact or exchange ideas and experience with professional colleagues from different institutions. Delegation to such professional events should be a policy of all libraries. This is to give exposure to their staff to new ideas and professional practices.

Psychological traits which contribute to successful staff performance are leadership qualities, motivating persons or examples of self motivation, communication skills in personal relations, etc.

INTEXT QUESTIONS 16.3

1. Discuss the need for performance appraisals.
2. Explain the purpose of staff training.
3. What are the different forms of staff training?

16.4 SALARY AND BENEFITS

Salary is an amount paid to library staff in return for work for a particular period, usually a month. Salaries for library staff varies depending on a number of factors including the type, size of the library and staff position, qualification and years of experience, etc. In most of the libraries, salaries and other benefits are as given below :

- Salary: Basic salary plus allowances, total salary, total remuneration
- Salary scales –overlapping and non-overlapping
- Salary structure based on: Length of service, Merit, or Combination of both
- Fringe Benefits Employee insurance, retirement benefits, bonus, conveyance allowance, medical benefits, etc.
- Monetary rewards

16.5 OFFICE MANAGEMENT

Every organization normally has administrative and finance units to take care of the general maintenance of its physical premises. Management of office, requirements of purchase and supply, personnel management, watch and ward, finance and accounts and other office functions are also required. These units function under the supervision and control of administrative and finance officers with administrative and finance/accounts assistants and section officers. They serve under the supervision and control of the Chief Librarian or Head of the organization and report to him/her.

WHAT YOU HAVE LEARNT

- This lesson focuses on human resources as the most valuable of all resources that have the potential to transform all other resources into tangible products and services.
- Staffing is an element of management that builds up the manpower strength of any organization.
- The three levels of staff are: Top, Middle and Lower level.
- The different categories of library staff are: Professional, Semi-professional, Non-professional and Supporting staff.
- Staffing involves a series of steps such as manpower planning, recruitment and selection, employment and induction, roles and responsibilities of persons in different positions, performance appraisal, staff training and development that includes continuing education.
- Induction is necessary to introduce the new staff to their co-workers, superiors and to the other staff of the library. This is to make them feel at home in their new environment.
- Office functions takes care of all administrative and financial functions of the organization

TERMINAL QUESTIONS

1. How is staff strength built in a library?
2. Define induction. How does induction of new employees help ?
3. What would be the result if there is no performance appraisal in a Library?
4. Staff training and development should be an in-built facility. Why?

ANSWERS TO INTEXT QUESTIONS

16.1

1. Staffing is an element of management to build up staff strength of a library to achieve its goals and objectives.
2. Manpower planning includes provisions of staff strength, both in quality and quantity and quality in relation to the different functions, recruitment and selection, appointment and induction, performance appraisal, staff training and development.
3. The three levels of staff are: Top, Middle and Lower.
4. The different categories of library staff are: Professional, Semi-professional, Non-professional and supporting staff.

16.2

1. The steps in recruitment procedure are:
   - Advertisements in newspapers and other communication media, inviting candidates suitable for different positions
   - Recruitment and Selection
   - Appointment and Induction.
2. Induction is necessary to introduce the new staff to their co-workers, superiors and to the other staff of the library. This is to make them feel at home in their new environment.
3. Library services have to be based on more interactive relations with users to determine and understand their information needs, depending on the type of users in libraries.

16.3

1. A library has to always maintain its standard of performance efficiency, irrespective of any change. Performance appraisal helps to maintain the high standard of efficiency by periodical assessment of staff. Those who fall short of the standard efficiency are to be given special attention to raise them to the standard quality.

2. Training to update professional knowledge and trends in the field makes the staff get prepared for the changes that constantly take place in professional fields. This ensures the highest performance standards.

3. The different types of staff training is: in-service training for new employees, continuing education to keep abreast of new developments and trends, higher professional qualifications for those who need to qualify at higher levels. Besides these, participation in national and international conferences, seminars, workshops and such other meeting give an exposure to the staff to exchange knowledge and experience and keep them updated with current trends.

GLOSSARY

Career development : The process by which individuals establish their current and future career objectives and assess their existing skills, knowledge or experience levels and implement an appropriate course of action to attain their desired career objectives.

Continuing education: Upgrading already acquired knowledge of the staff of an organization

Ethics: A philosophy principle concerned with opinions about appropriate and inappropriate moral conduct or behaviour by an individual or social group.

Fringe benefits: Employment benefits granted to employees in addition to their current base salary or wages (i.e., cash, facilities, health insurance, pension plans, holidays, paid vacations, etc.).

Induction programme: Programmes designed to introduce and acclimate newly hired employees into the organization.

Salary structure: A structure of job grades and pay ranges established within an organization.

WEBSITES

http://en.wikipedia.org/wiki/Human_resource_management

http://www.managementstudyguide.com/human-resource-management.htm

http://en.wikipedia.org/wiki/Human_resources

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17

LIBRARY USERS

17.1 INTRODUCTION

The primary objective of any library, irrespective of its type or size, is to meet the information requirements of its users. All the activities of a library, from selection of resources to their organization, storage and dissemination are carried out keeping in view the users' requirements. User satisfaction becomes the ultimate goal of any library. Libraries, therefore, need to assess their services to ensure that the best use is being made of the available resources. They need to find out, if the services provided are appropriate to the needs of the users, reaching the target group and user's opinion about the services. For this, libraries regularly carry out user studies.

In this lesson, you will study the methods and techniques of library user studies. You will also be exposed to types of user orientation and user education programmes. Such training programmes not only create awareness but also make users independent in finding and using information.

17.2 OBJECTIVES

After studying this lesson, you will be able to:

- list different types of users and their information needs;
- state the methods and techniques of assessing users' information requirements;
- illustrate methods of information gathering habits of users;
- design questionnaires for gathering information requirements of the users;
- describe the purpose and methods of user education; and
- learn about user orientation and user education programmes offered by the libraries.

17.3 USER GROUPS AND INFORMATION NEEDS

As you are aware, an academic library serves the students and teachers of a specific school, college or university. Special library, attached to an R&D organization, serves personnel engaged in research and development activities and a public library serves the local residents of a region. Thus, each library serves a specific user group. Each user group need information for some purpose or other. Information needs vary from person to person. Table 17.1 shows Information needs of user groups and purpose for which they need information.

USER GROUP	INFORMATION NEEDS AND PURPOSE
Students	Study, project work, general interest
Teachers	Teaching and research
Researchers	R&D information in specific disciplines
Professionals	Technical information to pursue careers
Planners, Policy Makers	Information to frame policies and take decisions
Managers, business people	Product information, market trends and regulatory information
Communicators, intermediaries	Information to create awareness in masses about new processes, products, etc.
Technicians, supervisors, and para professionals in industry, business	Technical and problem solving information
General public	Vocation related information, general interest information

Table.17. 1: User Groups and Their Information Needs

Of all the user groups, researchers are the most extensive users of library resources and services. They need information to keep up to date, to find new areas of research, to avoid duplication of research and to solve problem. A large number of user surveys have been conducted to ascertain information needs of all categories of library users including common man. On basis of these surveys, we can identify four types of information user needs, namely, i) Current Information Need, ii) Exhaustive Information Need, iii) Everyday Information Need, and iv) Catching up Information Need. Information needs usually vary from person to person. Besides this, a user may have varied needs at different point of time.

When users need latest developments in their areas of interest on regular basis, the need is known as **current information need.**

When user wants to have complete and detailed information on a particular topic, the need is known as **exhaustive information need.** This type of information need is usually required by researchers.

Everyday information need is for a specific information required by users in their day-to-day activities. The need is generally for factual information normally available in standard reference books.

Catching-up information need arises when a user, not conversant with a particular subject field, requires an account of overall development of that subject in short and compact form.

To meet information needs of their users, libraries provide a wide range of services, which you have studied in Lessons 12, 13 and 14.

INTEXT QUESTION 17.1

1. List the different types of information needs of library users.

17.4 USER STUDIES

Libraries periodically conduct user studies to ascertain the needs and opinion of the users. The user studies also help the libraries to:

- assess the information needs of the users,
- know unfulfilled information needs,
- find out the use of library resources and services,
- know users' opinion about the library collection, staff, and services, and
- ascertain need for a new services.

17.5 USER STUDIES - METHODS

Libraries use various methods to carry out user studies. These methods are direct and indirect methods. Direct methods are based on establishing contact with the users and active involvement of the users under study. While, indirect methods are based on library's own analysis of its records and other sources, without the involvement of the users under study.

17.6 INDIRECT METHODS

Many libraries depend on analysis of their records and statistics, like, circulation records, reservation records, reference query files, etc .to assess the information requirements of their users. These methods are known as **indirect methods.** Library records provide useful information. For example, records of reference questions and literature search can give an insight into the type of queries received, type of documents used and time taken to answer a question, etc. Similarly, circulation record can be analyzed to determine the activity of the library as well as to determine the reading habits of library users. Indirect methods provide useful information. However, for finding views of the user, indirect methods are not appropriate. For example, indirect methods cannot provide information related to user's views about library services and his/her attitude, opinion, or preferences or behavior as an individual. It thus, becomes necessary to observe or question them directly.

INTEXT QUESTIONS 17.2

1. Why do libraries conduct user studies?
2. What do you understand by direct and indirect methods of library user studies?

17.7 DIRECT METHODS

Direct methods of user studies involve participation of the users under study. Most of the general methods and techniques of social surveys, such as questionnaire, interview, diaries, observations, etc. are direct methods. You will learn these methods in the following sections.

17.7.1 Questionnaire

A questionnaire is a structured schedule of questions, intended to be answered in writing. Questionnaires are a useful way to seek the opinion of users over widely scattered area. The most common form of questionnaire is the postal questionnaire, although questionnaire may also be given by hand, or may be sent via e-mail or online.

17.7.1.1 Types of Questions

Questions may be for seeking **facts** or **opinion**, and can be **closed** or **open-ended.**

a) Questions on Facts or Opinion

Questions on facts are those which are intended to obtain facts and are concerned with characteristics of respondent, description of a behaviour or events. For example, questions about respondents' age, sex, qualifications, occupation, use of a particular service, etc. are fact finding questions.

Questions on opinion seek to find out, not what a person knows, or what he has done, but what he thinks about certain service, event, or situation. For example, one might ask questions like - Are you satisfied with the library services? Or what, if anything, do you think can be done to improve library services?

b) Closed Questions

Questions can be constructed in such a way that the response categories are determined in advance. Such questions are called closed questions.

Type of Closed Questions

The simplest form of closed question is one for which only two possible responses are provided from which the respondent must choose one, often **'Yes'** or **'No'**. There may also be questions to which several alternative responses are provided, but again the respondent must choose only one. For example:

Q. Which of the following age groups you belong to?

Under 21	
21-45	
46-65	
Over 65	

In some questions, respondent may be instructed to select all the responses which may be applicable.

Q. For which of the following reasons you use this service? (You may tick more than one)

Current Teaching Programme	
Current Research Programme	
Keeping Up-to-Date	
To Write a Paper	
General Interest	

Another form of closed question consists of responses in the form of a scale on which the respondent marks the strength of his opinion.

Simplest and most commonly used form of a scale is following:-

Strongly Agree	
Agree	
Neither Agree Nor Disagree	
Disagree	
Strongly Disagree	

Such scales are **verbal scale** and have middle option. It is important that odd category is provided so that there is always a middle point. An alternate to verbal scale is **numerical scale** in which lowest and highest number represent the extreme views. In order to make scale more familiar to respondents, an image such as ladder or smiley chart showing faces may be provided which is a simple way of representing the level of satisfaction. Such scales are known as **image scale**.

Ranking Questions

In some questions, you may wish to know the relative importance which the respondent attaches to a list of categories. The respondent may be asked to rank a whole list of categories or choose the most and least desirable items from a list or select the most desirable item from a pair of comparisons.

Q. Below are listed attributes of librarians. Please rank them in the order of importance (from 1 to 5), as you see it, putting the most important one first.

- Sound knowledge of subject
- Skill in on-line searching
- Good manners with public
- Pleasant appearance
- Good general knowledge

Advantages of Closed Questions

- They are simple to administer.
- It is easy to pre-code responses to facilitates analysis.

Disadvantages of Closed Questions

- A respondent may be forced to state an opinion on an issue about which he has no opinion.
- They do not allow respondent to qualify his/her response.
- Omission of possible alternatives may lead to bias.

c) Open-Ended Questions

Open ended questions are those in which the question itself is standardized but the response is left blank. It allows the respondent to answer in his own words.

Advantages of Open-Ended Questions

- Respondents can express themselves in their own language.
- Allows and encourages respondents to give their opinion fully.
- Allows respondents to make distinctions, which are not possible with closed format.
- Generate quotations which can be used in survey findings to make them interesting.

Disadvantages

- When used on mailed questionnaire, the answer may be short and superficial.
- The amount of space allotted for the entry of a response is likely to affect the wording of the response.
- Open-ended questions demand more thought from the respondents, and thoughts may emerge in a haphazard way.
- Analysis of open-ended questions is more difficult than analysis of closed questions.

17.7.1.2 Designing the Questionnaire

Designing a questionnaire involves skillful translation of objectives of the study into a set of questions. Questionnaire should be designed carefully. If the questionnaire is poor, the results of the study could be useless. A good questionnaire is brief, attractive, asks unambiguous questions, interesting and easy to complete. The following should be kept in mind, while designing a questionnaire.

i) Questions Wording

Questions should be clearly phrased. Avoid ambiguous terms. Ambiguity can arise in two ways, firstly in the use of individual words, and secondly in the sentence construction. Avoid loose terms like usually, sometimes, rarely, frequently, etc.

ii) Leading and Loaded Questions

Avoid leading and loaded questions. For instance, if you prepare a question with the phrase such as 'many people do such and such', you may encourage the respondent to give an answer that shows he conforms and it may not be his true opinion.

For example, the following question is a leading question and should be avoided:-

Q. Most people find reference staff in the library helpful. Do you? Yes/No

The above question may be reframed as follows:-

Q. Do you find the reference staff in the library helpful? Yes/No

Here, the pressure to conform towards a favourable view is removed.

iii) Length of the Questionnaire

In general, questionnaire should be as short as possible, without compromising the aim of the study.

iv) Order of Questions

Start the questionnaire with a question that will put the respondent at ease, and make him willing to complete the rest of the questionnaire. First question should be easy to complete. If possible, try to begin with closed questions rather than open-ended ones, as closed questions require less effort by the respondent and also help to clarify what the study is about.

Try to ask questions in logical order. Questions on the same topic should be grouped together and when the topic is to be changed, the respondent should be alerted with the introductory phrase.

v) Questionnaire's Format

- Be consistent,
- Make clear where and how response is to be given,
- Leave adequate space for responses,

- Number all the questions in continuous sequence and use letters to identify sub-parts, and
- Do not spilt question and its response category between pages.

vi) Accompanying Letter

All questionnaires should be sent out with an accompanying letter. Identify the organization conducting the study, purpose of the study and its social usefulness in the letter. Explain why the respondent is important, by simply describing, the way he was chosen. Respondent should be told whom to contact, if he has some queries. A phone number should be included. Indicate how the results of the survey would be communicated and thank respondents for their cooperation.

17.7.1.3 Advantages of Questionnaire

A questionnaire can be used to advantage when:

- Population to be reached is large and widely scattered geographically.
- It is possible to determine in advance what questions need to be asked in the study.
- Resources for data collection are limited.

17.7.1.4 Disadvantages

- Return is never complete, as normally only 50% of the mailed questionnaires are returned.
- At times questions are misinterpreted. To guard against misinterpretation, it is advisable to pretest and check the questionnaire on limited subjects. Another way to guard against misinterpretation is to supply a filled-in model questionnaire along with the questionnaire.
- As the interviewer is not present during the study, the tendency is to give the ideal or best answer, which may affect the findings.
- Some respondents may be unable to complete the questionnaire due to reading and writing illiteracy, language problem or any other reason.

INTEXT QUESTIONS 17.3

1. Enumerate direct methods of library user studies.
2. When should questionnaire method be used in library user studies?
3. Differentiate between closed and open-ended questions.

17.7.2 Interview

An interview involves verbal interaction between the interviewer and one or more respondents. It is either conducted face-to-face or by telephone. It is usually conducted with one individual at a time, but it may also be done with a group of individuals.

17.7.2.1 Type of Interviews

Interviews can be of different types, i.e., structured, semi-structured and unstructured interviews.

i) Structured Interview

Here the questions, their order, and response categories are decided in advance. Structured interview is based on an interview schedule, which is in the form of a questionnaire.

Advantages of Structured Interview

As there is consistency in the topics covered, responses to the questions can be compared and aggregated. Data analysis is also simple.

Disadvantages

- Questions and answers cannot be adopted if they seem inappropriate.
- Information which does not fit into predetermined categories is lost.
- Respondents may have to distort their views in order to choose a response.

ii) Semi-Structured Interview

Here some questions are structured and some are open-ended. Often, structured questions are used to obtain 'factual' information, such as age, number of books borrowed, employment status, etc. and open-ended questions are used when opinion, explanation or description of behaviour or events are sought. Here, the design of an interview schedule involves the use of principles similar to those used in the questionnaires.

iii) Unstructured Interview

It closely resembles natural conversation. Neither the questions, nor the response categories are determined in advance. Questions emerge from the interview as it develops. This method has great degree of flexibility. Respondents are free to express themselves in a language that suits them; they are not obliged to fit their ideas into someone else's categories. However, analysis of responses is difficult, as there is no consistency in the coverage of the topics, and the amount of data generated.

17.7.2.2 Advantages of Interview

- Misinterpretation of the questions can be avoided, as the interviewer is present to provide the correct interpretation.
- The response is hundred percent, and not like the questionnaire method, where response is invariably poor.

17.7.2.3 Disadvantages

- To reach a sizable sample, interview method is time consuming and costly.
- This method is costlier than questionnaire method, because the interviewers need to be trained.
- Interviewers need to establish rapport with the interviewees, especially the reluctant ones to get the answers skillfully.

INTEXT QUESTIONS 17.4

1. What do you understand by interview? Describe its types.
2. Which type of interview is more useful for carrying out library user studies?

17.7.3 Diary Method

In this method, individuals under study are asked to maintain a detailed record of particular information activity. Activities, like searching for information, actual reading, discussion with the colleagues, library use, etc. can be recorded for a given period of time. To facilitate the work of recording and the final analysis of data, 'data diary forms' are supplied to the individuals.

17.7.3.1 Advantages of Diary Method

This method provides a useful starting point for a semi-structured interview, as diary provides a check-list of topics to be covered in the 'interview'.

Diaries can be used to record information related activities of the individuals, which are otherwise difficult to observe, such as reading habits at home.

17.7.3.2 Disadvantages

As this method involves maximum effort on the part of the individuals, they may not record their activities completely. This tendency will be greater, if the period of record keeping is longer.

17.7.4 Observation

Observation by others is a way of collecting data in a purposeful and systematic manner about the behaviour of an individual or groups at a specific time and place. The technique of observation involves watching and recording actions as they occur. Distinguishing feature of observation is that information required by the investigator is obtained directly.

Observation method is useful for studying:

- the use of library catalogue;
- use of reading room facilities;
- use of books and periodicals in the display area;
- activities in the reference and enquiry desk; and
- the number of users approaching the library staff.

17.7.4.1 Advantages of Observation

- You can discover what actually happens rather than individual's version of what happens.
- Observation is independent of individual's willingness to report.
- Some things are taken for granted by the individuals and may not be reported, but are noticed by a trained observer.
- It is rather inexpensive compared to other methods of data gathering

17.7.4.2 Disadvantages

- The method is not suitable for collecting data on people's attitudes and opinions.
- There is a possibility of influencing the individual's behavior if they know they are being observed.
- Method is not suitable for recording past events.

INTEXT QUESTIONS 17.5

1. What is Diary Method of library user studies? List its limitations.
2. Describe Observation method and state how it is useful.

17.8 USER TRAINING

User studies conducted during 1950s provided an insight into the users' information requirements and also revealed that existing library resources and services are not fully utilized by the users. Library professionals stressed the need for training the users, so that they may use the library resources to their benefit. This was emphasized more, because it was observed, that users were not fully aware of the library resources and services. In the years which followed, the need for library instructions in academic libraries was widely accepted, and means for implementation were being followed. Presently, it would be difficult to find any library that is not engaged in some activity or programme concerned with user training.

A wide range of training programmes are provided by the libraries. These training programmes aim to help the user to find and search information independently. Depending upon the type of instructions, the programme may be user orientation, bibliographic instruction, or user education programme. Let us study what each training programme offers.

17.8.1 User Orientation

Libraries, particularly academic libraries, organize 'user orientation' or 'user initiation' programmes for the new students at beginning of the academic session. Basic aim of the user orientation programmes is to introduce the library and its services to the new user. Such programmes acquaint the user to the library and its facilities such as general rules and regulations of the library, collection of the library and its location, catalogue of the library and how to use it, lending and borrowing facilities, and about reference and information services of the library. These programmes are in the form of a lecture by the librarian followed by a tour of the library; or a brochure containing all the information; or an audio/visual kit that introduces the library to the new comer.

17.8.2 Bibliographic Instructions

Training programmes on bibliographic instructions concentrate on teaching the participants with basic literature search techniques to find required information. The training course normally covers structure of the literature of a subject. It can be different types of documents that are available and their information characteristics. The training includes how to plan a search that will give best results in shortest possible time; availability of computerized databases and search techniques through them; and practical exercises on literature search on specific topic. Such training programmes are normally offered in universities and research organisations.

17.8.3 User Education

User education is a broader concept. It is an educational activity which is concerned with creating awareness among the students about the value of information, motivating them to use library resources to supplement class room teaching. Here the user training programmes are designed based on the course curriculum of the target users. At times class teachers are also involved in preparing practical exercises. Such activities develop skills in the users to find and search information independently for study, research and recreational purposes.

17.8.4 Information Literacy (IL)

Information literacy is a recent concept. *US Forum on Information Literacy* defines information literacy as "The ability to know when there is need for information, to be able to identify, locate, evaluate and effectively use that information for the issue or problem in hand".

Information Literacy empowers people in all walks of life to :

- identify which information is needed;
- understand how information is organized;
- identify the best sources of information for a given need;
- locate these sources;
- evaluate the sources critically; and
- use and create information effectively, to achieve their personal, social, occupational and educational goals.

Information literacy is important, because we are surrounded by information in all formats, particularly digital information on the Web. Not all created information is equal. Some is authoritative, current and reliable, while some is biased, outdated, misleading and false. Information literacy competency enables people to judge that the information they are using is accurate and is from a reliable source.

Libraries and library professionals can play an active role in information literacy programmes of parent institutions, by:

- Creating information access tools (OPAC, databases, etc.),
- Selecting, organizing and preserving information in all formats (print as well as non-print),
- Introducing information technologies, and
- Acting as consultant and facilitators in the use of information technologies.

INTEXT QUESTIONS 17.6

1. What is User Orientation?
2. Define information literacy.

WHAT YOU HAVE LEARNT

- User studies are conducted by the libraries to know the information requirements of the users and to find out the use of library resources and services. There are two methods of user studies, the direct and indirect method.
- User studies have helped to identify four types of information needs of the users, viz., current information need, exhaustive information need, everyday information need and catching-up information need.
- Indirect user studies methods are based on the analysis of library's own records, such as circulation, reference service records, etc.,without the involvements of the users under study.
- Direct methods involve active participation of the users under study. Direct methods use Questionnaire, Interview, Diary or Observation as an instrument for conducting the user studies. Each of the direct methods has its advantages and limitations.
- Questionnaire method should be used when population to be covered is large, distantly located and resources are limited.
- Designing a questionnaire is an art. Questionnaire should be brief, attractive, ask unambiguous questions, interesting and easy to complete.
- User studies revealed that existing library resources and services are not fully utilized by the users and stressed the need for training the users.
- User training programmes provided by the libraries aim to help the users to use existing resources and services fully and make them independent in searching and using information.

TERMINAL QUESTIONS

1. Describe in detail the various aspects to be included while designing a questionnaire.

2. List various types of interview schedules, explaing their advantages and disadvantages.

3. Discuss in detail, the types of information needs of the library users.

4. What is information literacy? What is the role of a library in information literacy programmes of its parent institution?

ANSWERS TO INTEXT QUESTIONS

17.1

1. There are four types of information needs of the users, namely, i) Current Information Need, ii) Exhaustive Information Need, iii) Everyday Information Need, and iv) Catching up Information Need.

17.2

1. Library user studies are conducted to find out information requirements of the users, use of library collection and services, know users' opinion about existing services, their unmet information needs and to find out if there is any need for a new service.

2. Direct methods of user studies involve participation of the users under study and are based on establishing contact with the users. Whereas indirect methods are based on library' own analysis of library records and other sources, without the involvement of the users under study.

17.3

1. Direct methods of library user studies are questionnaire, Interview, diaries and observation.

2. A questionnaire is a structured schedule of questions, intended to be answered in writing. Questionnaires method is used when population to be covered is large, widely scattered and resources for data collection are limited.

3. In closed questions, the questions and response categories are determined in advance and both are standardized. In open-ended questions, the

question itself is standardized, but the response category is left blank, which allows respondent to answer in his own words.

17.4

1. An interview involves verbal interaction between the interviewer and one or more respondents. It is either conducted face-to-face or by telephone. It is usually conducted with one individual at a time, but it may also be done with a group of individuals. Interviews can be structured, semi-structured and unstructured interviews.

2. Semi-Structured Interview is more useful for conducting library user studies. Here some questions are structured and some are open-ended. Often, structured questions are used to obtain 'factual' information, such as age, number of books borrowed, employment status, etc. and open-ended questions are used when opinion, explanation or description of behaviour or events are sought. Here, the design of an interview schedule involves the use of principles similar to those used in the questionnaires.

17.5

1. In Diary Method, the individuals to be studied are asked to keep a detailed record of their information related activities. Activities, like searching for information, actual reading, discussion with the colleagues, library use, etc. are recorded for a given period of time. To facilitate the work of recording and the final analysis of data, 'data diary forms' are supplied to the subjects. As, this method involves maximum effort on the part of the subjects, they may not record their activities completely. This tendency will be greater, if the period of record keeping is longer.

2. Observation method involves watching and recording in a purposeful and systematic manner thebehaviour of an individual or group at a specific time and place. Distinguishing feature of observation is that information required by the investigator is obtained directly. Observation method is useful for studying the use of library catalogue, use of reading room facilities, use of books and periodicals in the display area, or for finding out what happens to users in the reference and enquiry desk, and what proportion of users approach library staff, etc.

17.6

1. User orientation is acquainting the new user to the library and its facilities. These programmes are in the form of a lecture by the librarian followed by a tour of the library or distribution of library brochure or an audio/ visual kit is prepared to introduce the library.

2. Information Literacy can be defined as "The ability to know when there is need for information, to be able to identify, locate, evaluate and effectively use that information for the issue or problem in hand".

GLOSSARY

Circulation record: Records related to circulation of library material.

Image scale: It is used in closed questions. Here responses are in the form of scale using image such as faces or ladder to represent different views.

Numerical scale: Used in closed questions. Here responses are in the form of scale using numbers ranging from 1 to 5 or 7 to represent different views.

Reference query file: File containing questions received by the reference staff from the users and their answers.

Respondent: Someone who answers or replies.

Verbal scale: Used in closed questions. Here responses are in the form of scale using words to represent different views.

WEBSITES

http://www.en.wikipedia/wiki/Information_literacy

http://www.infolit.org

http://www.unesco.org/webworld/ramp/html/r8722e/r8722e0l.htm

http://www.slideshare.net/BLAlib/user-education-what-is-it-and-why-is-it-important-1725827

http://www.slideshare.net/Janecatalla/library-orientation-14381347

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18

LIBRARIANSHIP AS A CAREER

18.1 INTRODUCTION

When most of the users of libraries are asked, 'What does the job of a librarian involve ?'The probable answer would be finding or issuing library books or locating information on request. This is because many people's experience of librarians is of the frontline user service staff. Have you ever considered how the books get on to the shelves and are ready for you to borrow? Behind the scenes there are teams of library professionals working to make this happen.

There are library professionals for each and every activity of any library. They select the books for purchase, process the orders, create bibliographic records and then physically prepare them for placing on the shelves. This makes it possible for you to find the books in the library catalogue.

In this lesson, we will appraise you with different aspects related to library profession. After studying this lesson, you will be able to understand the scope of library profession and decide upon librarianship as a career.

18.2 OBJECTIVES

After studying this lesson, you will be able to :

- explain the role of librarianship as a profession;
- enumerate the qualifications and qualities of library professionals;
- discuss the role of library professionals in disseminating information;
- illustrate various courses offered in the field of library and information science;

- describe the influence of modern technologies on libraries and related activities;
- list the career opportunities for trained library professionals; and
- identify the type of organizations that offer job opportunities to trained library professionals.

18.3 LIBRARIANSHIP - A PROFESSION

A profession is a body of practitioners, who undertake and undergo specialized training and studies to practice their skills in the service of the society.

Like any other profession, such as law, medicine or teaching, librarianship is a profession requiring special training.

Librarianship is an old and honoured profession. In recent years there have appeared notable increases/changes in the collections and services of libraries. The expansion in the responsibilities of librarians has brought with it a pressing need of special preparation for their work.

Librarianship is a people' profession. A librarian's job is to connect people with the information they are seeking in whatever format it is available. All library related jobs have one central purpose, i.e., to help people access and use information. It can be for education, work, or for pleasure. In all library roles, user services and communication skills are important. Libraries of all kinds are keen to demonstrate their value to as wide an audience as possible.

Librarians select materials, organize those materials and help people to use them effectively. Many librarians are seen by users working on library counter. But a great majority of them work behind the scenes in technical support and acquisitions in administration. Although librarians traditionally worked with printed resources, they have kept up with ever-evolving technology. Now they work with electronic resources that include the Internet, computerized databases and e-books. Present day librarians are also referred to as information professionals.

Skills

One has to develop several skills while training to be a librarian. But he or

she should have certain qualities that will contribute to his or her success in this occupation. A librarian must be an active learner in order to adapt to the rapid changes in technology and the dissemination of information that are inherent to this field. He or she must have strong communication skills and the ability to work independently and as part of a team. A librarian must be good at problem solving and have strong comprehension skills.

The library profession is bound to flourish in near future in India as still libraries have not the whole population of our nation. It has been estimated by the National *Knowledge Commission of India* that the country should have at least 1500 universities to fulfil the need of higher education. Apart from this, because of *Right to Education Act*, thousands of schools are to be started. All these will also have to be supported by libraries.

18.3.1 Employment and Designation

Most librarians work in school and academic libraries. Others work in special, business, scientific/research or in libraries of other organizations. Employment opportunities for library professionals are thus available in all sectors of government and industries. With experience, librarians can advance to administrative positions, such as department head, library director or chief information officer. As mentioned earlier, earning a doctorate degree can contribute to one's upward movement in the library science field.

Let us try to understand the job opportunities for librarians sector wise.

18.3.1.1 Academic Library Sector

Academic library sectors includes university, college and school libraries. The university library system has designations of Librarian, Deputy Librarian and Assistant Librarian at senior level. At middle level, the designations are Senior Professional, Professional and Semi Professional, etc. At supporting staff level, designations are Library Assistant, Library Attendant, including multi-tasking staff, etc. The college libraries have the designation of Librarian which is equivalent to the Assistant Librarian of university libraries and the middle and supporting levels are same as the university libraries. The schools libraries usually have a librarian belonging to middle level of management and two or more support staff depending upon the size of the library.

18.3.1.2 Public Library Sector

The public library system is getting momentum in India. Initially, the public library was serving to the urban people, but, now it is extending to rural areas. Hence, in coming years, there will be several rural libraries at village level. Public Libraries in India. The State Central Libraries, District Libraries and Sub-

Divisional/Town Libraries and Rural/Village Libraries have four categories of staff, namely, managerial, professional, support staff and administrative staff. The last tier, the Rural Knowledge Centres/Community Information Centres have only the professional level staff and support staff depending upon their size.

18.3.1.3 Special Library Sector

This sector has the designations like Librarian, Library and Information Officer, Scientists, Manager Library, Manager-Knowledge Management. These posts are equivalent to the officer grade-A or above in the administrative pattern of staffing. In scientific organizations like CSIR, DRDO, ISRO, etc. these posts are equivalent to different levels of scientists. The private and corporate sectors are paying as per the policy of the organization. Some of the corporate houses are paying wages more than that of the government organizations.

18.3.1.4 Corporate Sector

In the Corporate sector, large organisations maintain libraries/information centers for their informational needs. These companies employ qualified professionals as Librarians, Information Scientists, Information managers, Database managers, Resource managers, Knowledge worker, Library supervisor, etc.

INTEXT QUESTIONS 18.1

1. Define the term ‘profession’. Describe librarianship as a profession.
2. Identify the job opportunities for librarians in academic sector.

18.4 QUALIFICATIONS & QUALITIES OF LIBRARY PROFESSIONALS

As you have learnt above, library jobs are different in nature from other general jobs we perform in our day to day life. Library is a social institution and librarianship is a part of service industry. It has the responsibilities to support education, research and development, self studies, etc. and become instrument in creating as well as preserving knowledge of our society. Hence the nature of this profession is completely unique.

For opting librarianship as a career, a certain amount of training plus qualities in a library worker are required. A number of training programmes in LIS are being run by academic institutions and Library Associations. Besides, possessing

academic and professional qualifications, a library professional is required to possess qualities of a good worker.

For starting career at higher level, one should possess at least a masters' degree in Library and Information Science with good academic record. Additional qualifications and skills in information and communications technology or specializations in patent information system, knowledge management, or preservation and conservation, archival studies, etc. may give an added advantage in employment. For middle and lower level, a bachelors' degree, diploma, certificate, etc. in Library and Information Science with good academic record may give good job opportunities.

To know about the qualities of library professional, let us think about a 'role model character' for librarians. Libraries are service institutions to serve the community of users. A library and information science professional should possess following qualities:

a) One whose existence is recognized by the readers/ users.

b) Someone who is accessible and give response all the time, whether face-to-face or on telephone or correspondence or via email.

c) One who is capable of giving results in accordance with what is required by the users. It implies the entire range of personal and technical competence of the librarian, viz. search skills, knowledge of resources, facilitation, cataloguing, managing budgets, managing staff, etc., whatever the tasks assigned.

d) A good librarian is someone who's passionate about the job. There can never be good/ excellent service without passion in what we do.

e) Should have teamwork skills and good interpersonal skills.

f) A librarian should be familiar with current and emerging technologies.

g) One who has the urge to gain knowledge all the time, as everyone wants latest information.

h) Lastly, a good librarian is one who understands and applies Ranganathan's Five Laws of Library Science. The Five Laws of Library Science have been covered in Module 1, Lesson 4.

INTEXT QUESTIONS 18.2

1. Enumerate qualities of professional librarian.

2. What are the qualifications required by library professionals to begin career at a higher level ?

18.5 ROLE OF LIBRARY PROFESSIONALS IN DISSEMINATION OF INFORMATION

You know that universe of knowledge, and its sources, is vast and ever expanding. On the other hand, the world of information seekers undergoes many changes. It is for the library professionals to organize, control, and manage the stored information, in such a manner that it is made available to its right user at the right time. Libraries provide a variety of quality services in order to improve the communication, use and creation of knowledge. In today's information age, increasing importance is placed on information dissemination. Librarians have an important role to play in the generation, preservation, and dissemination of this information. This is carried out by acquiring sources of information, processing, storing, retrieving these sources and providing library services.

The way knowledge is created, disseminated and acted upon continues to go through rapid change and evolution. The role of libraries and librarians in this new knowledge economy is very important. Librarians know how knowledge is created in today's information environment. What, when and how it should be delivered to appropriate users is decided by the librarians. It involves a series of activities or operations starting from developing an understanding of users' needs to selecting appropriate information sources for retrieval of desired information. In the web world, too the librarians play a vital role in the dissemination of knowledge. This is so because, the role of the library professionals is to mediate between the user and the information resources.

Users requirements is another area which is to be considered in this connection. The role of librarian thus is all about series of operations and decisions starting from developing an understanding of user's needs to selecting appropriate resources for retrieval.

INTEXT QUESTION 18.3

1. Describe the role of librarian in dissemination of information to users.

18.6 EDUCATION AND TRAINING PROGRAMMES

The libraries and their activities are highly sensitive and specialized in nature. So much so that over a period in the past century, their contents have become a special subject, namely, Library and Information Science (LIS) for study, learning and research. Although a variety of institutions are offering courses related to library and information science education, these can be broadly placed

under various categories, i.e., Certificate, Diploma, Degree, Masters' Degree, M. Phil and Ph. D. These programmes are offered by a variety of institutions that include: universities, polytechnics, open schools, library associations, etc. In India, LIS is being taught at various levels, as mentioned bellow.

- Senior Secondary Level
- Certificate Programme in Library Science
- Diploma Programme in Library Science
- Bachelor in Library and Information Science (B.L.I.S.)
- Master in Library and Information Science (M.L.I.S.)
- M.Phil. in Library and Information Science
- Ph. D. in Library and Information Science

INTEXT QUESTION 18.4

1. Enumerate the training programmes available for library professionals at various levels.

18.7 ADAPTATION OF MODERN TECHNOLOGIES

Advances in technology create impact in every walks of life. Library activities are no exception. Print technology (print media) helped in developing a clearer concept of library. Print media made the knowledge/information available to masses. Riding on it, the libraries also could reach masses.

With the advent and adaptation of computer, communication and information technologies in the late twentieth century, the libraries (their collections and services) became global. A variety of library software have been developed to help libraries in their working. On-line services are taking place of traditional services in libraries. Collections of e-resources are replacing the traditional forms of collection. Library networks, help from search engines, digitization of old valuable records and such other technologies have become the significant features of modern libraries. The impact of new technologies is thus felt by libraries in every aspect of their activities.

INTEXT QUESTION 18.5

1. Explain the impact of print and computer and communication technologies on libraries and librarianship.

18.8 CAREER & JOB OPPORTUNITIES

For professionally trained and qualified library professionals, librarianship promises a promising career. Starting from some low position in a library one may get the opportunity to avail a senior position in a big library system, a university library, special library, national library, and libraries of United Nations, WHO, ILO etc. Jobs are available as supporting staff, semi-professionals and professionals. The Chief Executives in big library system enjoy the status and pay perks equivalent to Directors, Senior Managers, Senior Scientists, etc.

Qualified professionals are offered jobs in book trade, information industry, media, bodies of advocates and doctors. These days, library professionals are also working independently and are referred to as 'library/information consultants'. Library consultant is an individual who can provide the expertise, inspiration, training, and support needed in all aspects of library activities and development. These professionals may put their professional skills to private practice. They assist in solving various library problems of finance, space management, adaptation of technology, etc. for a fee.

18.8.1 Employment Opportunities

There is a lot of scope for a career in library science. The students after acquiring library science qualifications can find employment opportunities in the libraries of following areas:

1. Public/Government libraries
2. Universities/Colleges schools and other academic institutions
3. News agencies and organisations
4. Private organisations and special libraries
5. Foreign embassies
6. Photo/film/radio/television libraries
7. Information centres/documentation centers
8. Companies and organisations including IT sector with large information handling requirements
9. Museums and galleries, which have reading rooms and research facilities

18.8.2 Salaries in Library and Information Profession

The salaries vary depending upon the nature of the organization. Many colleges and universities have adopted UGC scales of salary for the library staff. The library staff in the large establishments of the Central Government enjoy salary

scales similar to those applicable to scientific staff. Opportunities for upwards mobility based on assessment of performance at intervals, make the job attractive.

Persons possessing good academic record and adequate skills in computer and information technology, can look forward to a rewarding career in this profession.

INTEXT QUESTION 18.6

1. 'There are good job opportunities for qualified library professionals', Comment.

WHAT YOU HAVE LEARNT

In this lesson you have learnt:

- Like advocates or doctors, librarians also form profession of librarianship.
- Librarians are in the service of 'users' . They should possess academic and professional qualifications and qualities of good worker.
- Library professionals deal with 'universe of knowledge (information)' to serve the 'universe of information seekers'. They disseminate right information to right user at the right time.
- LIS training programmes are available at senior secondary level, undergraduate level, postgraduate level, and research level leading to M.Phil., Ph.D degrees.
- Libraries have adapted and benefitted from print technology, computer technology, communication technology, information technology, networking, etc.
- Librarianship promises a good and noble career. Job opportunities for qualified professionals are available at all levels, whether local, regional, state, national and international level.

TERMINAL QUESTIONS

1. Describe librarianship as a noble profession.
2. Mention the different training and education programmes available in the field of LIS.

3. 'Libraries have always responded to the advances in technologies', Comment.

4. Give your views on the career and job opportunities in the field of LIS.

5. Write a brief note on role of library consultants.

ANSWERS TO INTEXT QUESTIONS

18.1

1. A profession is a body of practitioners, who undertake and undergo specialized training and studies to practice their skills in the service of the society. Like any other profession, the librarians also form a profession. Librarianship is an old and honoured profession.

2. Academic library sectors include university, college and school libraries. The university library system has designations of Librarian, Deputy Librarian and Assistant Librarian at senior level. At middle level, the designations are Senior Professional, Professional and Semi Professional, etc. At supporting staff level, designations are Library Assistant, Library Attendant including multi-tasking staff, etc. The college libraries have the designation of Librarian which is equivalent to the Assistant Librarian of University Libraries and the middle and supporting levels are same as the university libraries. The school libraries usually have a librarian belonging to middle level of management and two or more support staff depending upon the size of the library.

18.2

1. Some of the qualities to be good librarian are:

a) One whose existence is recognized by the readers/ users.

b) Someone who is accessible and give response all the time, whether face-to-face or on telephone or correspondence or via email.

c) One who is capable of giving results in accordance with what is required by the users. It implies the entire range of personal and technical competence of the librarian, viz. search skills, knowledge of resources, facilitation, cataloguing, managing budgets, managing staff, etc., whatever the tasks assigned.

d) A good librarian is someone who's passionate about his/her job. There can never be good/ excellent service without passion in what we do.

e) Should have teamwork skills and good interpersonal skills.

f) A librarian should be familiar with current and emerging technologies.

g) One who has the urge to gain knowledge all the time, as everyone wants latest information.

h) Lastly, a good librarian is one who understands and applies Ranganathan's Five Laws of Library Science.

2. For starting career at higher level, one should possess at least a masters' degree in LIS with good academic record. Additional qualifications and skills in information and communications technology or specializations in patent information system, knowledge management, or preservation and conservation, archival studies, etc. may give an added advantage in employment.

18.3

1. The way knowledge is created, disseminated and acted upon continues to go through rapid change and evolution. The role of libraries and librarians in this new knowledge economy is very important. Librarians know how knowledge is created in today's information environment and what, when and how it should be delivered to appropriate users. It involves a series of activities or operations starting from developing an understanding of users' needs to selecting appropriate information sources for retrieval of desired information. In the web world, too the librarians play a vital role in the dissemination of knowledge. This is so because, the role of the library professionals is to mediate between the user and the information resources.

18.4

1. The LIS is being taught at various levels, such as, at Senior Secondary Level, Certificate Course, Diploma Course, Bachelor in LIS, Master in LIS, M.Phil. in LIS and Ph. D. in LIS.

18.5

1. In the past, print technology (print media) helped in developing a clearer concept of library. Riding on it, the libraries also could reach masses. The advent and adaptation of computer, communication and information technologies, the libraries (their collections and services) have became global. A variety of library software have been developed to help libraries in their working.

18.6

1. For professionally trained and qualified library professionals, librarianship

assures a promising career. Starting from some low position of attendant in a library one may get the opportunity to avail a senior position in a big library system, a university library, special library, national library, and libraries of United Nations etc. Jobs are available as supporting staff, semi-professionals and professionals. Qualified professionals are also offered jobs in book trade, information industry, bodies of advocates and doctors. In near future, there may come up a new category of and information consultants.

GLOSSARY

Academic Library: A library that is an integral part of a college, university, or other institution of post-secondary education established to meet the information and research needs of its students, faculty and staff.

Bibliographic Description: All the elements of data necessary to identify a specific document, presented in some form of record.

Body of Practitioners: Profession

Chartered Librarian: A new category of library professionals, who are specially trained to audit a library, act as Management Consultant and help in solving many library managerial problems.

Computerization: To perform the existing manual or mechanical activities with the help of computers.

E-Resource: An information source in electronic form.

Facilitator: Service provider (staff)

Library Audit: To check, inspect and report various library activities, situations, utilization of funds, manpower and other resources whether these fulfill the preset or newly modified objectives of the library.

Library Material: All the items acquired by a library or library system to satisfy the information needs of its users, including books, newspapers and periodicals, reference material, maps, microforms, and non-printmedia, as distinct from equipment and supplies.

Library Science: The professional knowledge and skill with which recorded information is selected, acquired, organized, stored, maintained, retrieved, and disseminated to meet the needs of a specific set of users. It is usually taught at a professional library school qualified to grant the degree of M.L.I. S. or B.L.I.S. The term is used synonymously with **Librarianship**.

Library Staff: The entire group of employees responsible for the operation and management of a library or library system, including its director, librarians, paraprofessionals, technical assistants, clerical personnel, support staff, etc.

LIS: Library and Information Science

WEBSITES

http://careers.guardian.co.uk/job-of-21st-century-librarian

http://librarycareers.drupalgardens.com/

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INFORMATION RETRIEVAL SYSTEM: CONCEPT AND SCOPE

15.1 INTRODUCTION

Information is communicated or received knowledge concerning a particular fact or circumstance. Retrieval refers to searching through stored information to find information relevant to the task at hand. In view of this, information retrieval (IR) deals with the representation, storage, organization of/and access to information items. Here, types of information items include documents, Web pages, online catalogues, structured records, multimedia objects, etc. Chief goals of the IR are indexing text and searching for useful documents in a collection. Libraries were among the first institutions to adopt IR systems for retrieving information.

In this lesson, you will be introduced to the importance, definitions and objectives of information retrieval. You will also study in detail the concept of subject approach to information, process of information retrieval, and indexing languages.

15.2 OBJECTIVES

After studying this lesson, you will be able to:

- define information retrieval;
- understand the importance and need of information retrieval system;
- explain the concept of subject approach to information;

- illustrate the process of information retrieval; and
- differentiate between natural, free and controlled indexing languages.

15.3 INFORMATION RETRIEVAL (IR)

The term 'information retrieval' was coined by Calvin Mooers in 1950. It gained popularity in the research community from 1961 onwards, when computers were introduced for information handling. The term information retrieval was then used to mean retrieval of bibliographic information from stored document databases. But those information retrieval systems (IRS) were document retrieval systems. These were designed to retrieve information about the existence (or non-existence) of bibliographic documents relevant to a user's query. In other words, early IRS were designed to retrieve an entire document (a book, an article, etc.) in response to a search request. Although this is what today's IRS do, but over the years, many advanced techniques have been developed and applied to design the IRS. Over the years, the connotation of information retrieval has changed and it has been variously denoted by information professionals and researchers. Some of these include, information storage and retrieval, information organization and retrieval, information processing and retrieval, text retrieval, information representation and retrieval and information access.

Let us now understand the means through which information retrieval is carried out by libraries and some of the systems, for searching information from documents in its collection. No matter how large the collection, the library is of little value if it is unable to retrieve the right documents as and when required by a user. To do this, it must maintain an information retrieval system. When a match is achieved between the information requested and information in the retrieval system, then requested documents are located. In other words, the information supplied from the document(s) matches to an acceptable degree with the information demanded by the user. Achieving a successful match is the central objective of information retrieval.

The principal function of any library is to make available to the users, the information they need. In order to fulfill this function, the information which is stored in the library must be retrieved from the library database. Information retrieval (IR) is the activity of obtaining information resources relevant to an information need from a collection of information resources. Information retrieval is the process of selecting information from the stored information. The process is becoming increasingly dependent on computers and telecommunications technology. The design of information retrieval systems has presently become an important area of applied information technology.

INTEXT QUESTION 15.1

1. Why is Information retrieval an important function of any library?

15.4 INFORMATION RETRIEVAL SYSTEM

The concept of Information Retrieval System (IRS) is self-explanatory from the terminological point of view and refers to a 'system which retrieves information'. IRS is concerned with two basic aspects: (i) How to store information, and (ii) How to retrieve information.

One may simply denote such a system as one that stores and retrieves information. IRS is comprised of a set of interacting components, each of which is designed to serve a specific function for a specific purpose. All these components are interrelated to achieve a goal. The concept of IR thus is based on the fact that there are some items of information which have been organized in a suitable order for easy retrieval.

An information retrieval system is designed to analyze, process and store sources of information and retrieve those that match a particular user's requirements. Modern information retrieval systems can either retrieve bibliographic items or the exact text that matches a user's search criteria from a stored database of documents. IRS originally meant text retrieval systems as they were dealing with textual documents. Modern information retrieval systems deal not only with textual information but also with multimedia information comprising text, audio, images and video. Thus, modern information retrieval systems deal with storage, organization and access to text, as well as multimedia information resources.

Thus, an IR system is a set of rules and procedures, for performing some or all of the following operations:

a) Indexing (or constructing of representations of documents);

b) Search formulation (or constructing of representations of information needs);

c) Searching (or matching representations of documents against representations of needs); and

d) Index language construction (or generation of rules of representation)

So information retrieval is collectively defined as a "science of search" or a process, method and procedure used to select or recall, recorded and/or indexed information from files of data.

15.4.1 Objectives and Functions of IRS

The major objective of an IRS is to retrieve the required information whenever needed. It is either the actual information or through the documents containing the information surrogates that fully or partially match the user's query. Thus, the search output may contain bibliographic details of the documents that matches the query, or the actual text, image, video, etc. that contain the required information. The database in case of an information retrieval system may contain abstracts or full texts of documents, like newspaper articles, handbooks, dictionaries, encyclopedias, legal documents, statistics, etc., as well as audio, images, and video information.

The major functions of an IRS are:

(i) To identify the sources of information relevant to the areas of interest of the target users' community;

(ii) To analyze the contents of the sources (documents);

(iii) To represent the contents of the analyzed sources for matching with the users' queries;

(iv) To match the search statement with the stored database;

(v) To retrieve the information that is relevant; and

(vi) To make necessary adjustments in the system based on feedback from the users.

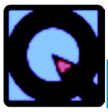
INTEXT QUESTION 15.2

1. What is the major objective of Information Retrieval System (IRS)?

15.5 IMPORTANCE OF INFORMATION RETRIEVAL

Libraries contain information in various physical forms. While for many users, the book is still a major vehicle for communication of information; for others, the periodical or the technical report have taken its place; and for yet others, films or gramophone records are significant. It is clear that the same work can appear in various physical forms. The intellectual content will be the same in each case, but obviously it is not practical to try to arrange the different physical forms together. We cannot, therefore, rely on the physical arrangement of the items in a library to gather different versions of the same work. We have to rely on a substitute – a set of records (surrogates) of the content of the library. These are in the form of library catalogues and bibliographies.

The library catalogue, however, is only one of the tools which serves as the key to library documents. A library containing a large number of periodicals will not attempt to list all articles of every issue if receives. Instead, we rely on indexes, abstracts and similar bibliographic tools which present the contents of periodicals as well. This enables us to obtain access to any particular item through number of approaches.



INTEXT QUESTION 15.3

1. Explain the importance of catalogues and bibliographic tools in libraries.

15.6 SUBJECT APPROACH TO INFORMATION

Users often approach information sources with a query that requires an answer or they seek information or documents on specific topics. This method of seeking information from sources by the users is referred to as subject approach to information. In order to provide this kind of information, it is necessary for information organizations to arrange documents or surrogates of documents in library catalogues, indexes or databases in such a way that items of specific information can be retrieved. There are various methods of providing information contained in documents using the subject approach. Two chief methods for the same are:

- Alphabetical subject approach
- Display of subject relationships

15.6.1 Alphabetical Subject Approach

Here the items of information are first grouped under the subject and then arranged according to alphabetic order so that specific subjects can be retrieved easily. Some problems to be overcome here are those related to synonyms, homographs, singular or plural forms, complex and compound words or subjects and multiword concepts.

15.6.2 Display of subject relationships

Like human beings, the subjects too have relationships, these include syntactic relationships and semantic relationships. Syntactic relationships deal with the way words and phrases of a sentences are arranged to show how they relate to each other. For example, a keyword search for "Photographs and Albums", should allow users to specify whether they want "Photographs of Albums" or "Albums of Photographs". Semantic relationships deals with the meanings of

the words. For example, there is semantic difference between mercury (Planet) and mercury (metal), though two words are identical in sound and spelling.

The first librarian to consider the detailed arrangement by subject was Melvil Dewey. Librarians prior to Dewey had certainly arranged their libraries in classified order; the classified catalogue was well known. However, these classified arrangements were in broad subject groups; there was no attempt to give the detailed subject specification that Dewey suggested and which was necessary and useful. Dewey's classification scheme served two purposes: the first of these was the arrangement of books on shelves; and the second was the arrangement of entries in catalogues and bibliographies.

The Subject approach or subject indexing is the process or technique of identifying and selecting terms (words, phrases, sentences, taxonomic categories, notation) to indicate what a document is all about. It helps to summarize its contents and increases its retrieval by users. In other words, it is about identifying and describing the subject of documents. Its purpose is to facilitate finding a particular information on the basis of its subject content.

The two steps of subject indexing are:

a) Subject analysis to generate concepts that describe the document, and

b) Translation of concepts into controlled vocabulary for retrieval

INTEXT QUESTION 15.4

1. Describe how the subject approach to information came into existence.

15.7 INDEXING LANGUAGES

As discussed above, when the librarians apply subject approach to information, they are confronted with the difficult task of subject indexing. They have to deal with the complexity, variability, and richness of natural language of documents. Using unlimited or uncontrolled set of words or phrases to index leads to wasted efforts. There is also a high degree of searching failure due to vast range of words chosen by users. It is rightly said that no two words in a language mean exactly the same and there are no true synonyms. But words are often very close in meaning and more often not clearly understood. The inconsistent/varying words could lead to failure in searching as the users may not choose the words or terms that might be used by the indexer or the authors of the documents. In order to overcome various complex indexing problems, many forms of controlled vocabularies have been developed.

Retrieval of information by subjects from huge mass of documents requires that essential concepts are identified and organised in a searchable form. Indexing is a mechanism by which information contained in documents can be organised. But the problems lie with identifying and organising the concepts. In the documentary information, authors communicate in natural languages which are characterized by linguistic features. To overcome the problems of natural language, the need for an artificial language or indexing languages arises. It means that an indexing language is a language used for subject classification or indexing of documents. An Indexing language is defined as the set of terms used in an index to represent topics or features of documents, and the rules for combining or using those terms.

The purpose of an indexing language is to express the concepts of documents in an artificial language so that users are able to get the required information. The indexing language does this by depicting the relationships among the differently related concepts.

There are three main types of indexing languages.

1. Natural indexing language - Any term from the document in question can be used to describe the document.

2. Free indexing language - Any term (not only from the document) can be used to describe the document.

3. Controlled indexing language - Only approved terms can be used by the indexer to describe the document.

In the following sections, you will be introduced, in brief, to natural, free and controlled indexing languages.

15.7.1 Natural Indexing Language

Natural language refer to our language, which we normally use for communication. Whereas, languages that we design for a specific purpose or use in a specific sense or only for limited use are artificial languages. Natural indexing languages are thus 'natural language' or ordinary language of the document being indexed. Any term that appears in the document is a candidate for index terms. In practice, natural language indexing tends to rely upon the terms present in an abstract or the title of a document. Natural language indexing is based upon the full text of a document, depending on how it is archived. It may lead to very extensive indexing of each document or will involve establishing some mechanism for deciding which terms are the most important in relation to a particular document. In computerized indexing this will involve statistical analysis of the relative frequency of occurrence of terms. In human

indexing some judgment would be required in selecting the terms. Many of these problems can be minimized by restricting indexing to titles and abstracts. Either, a computer or a person can execute natural language indexing. In computer indexing the computer may well use a list of terms deemed to be useful in indexing (example, a type of thesaurus) to identify appropriate terms. The use of natural language is depicted in a Figure 15.1

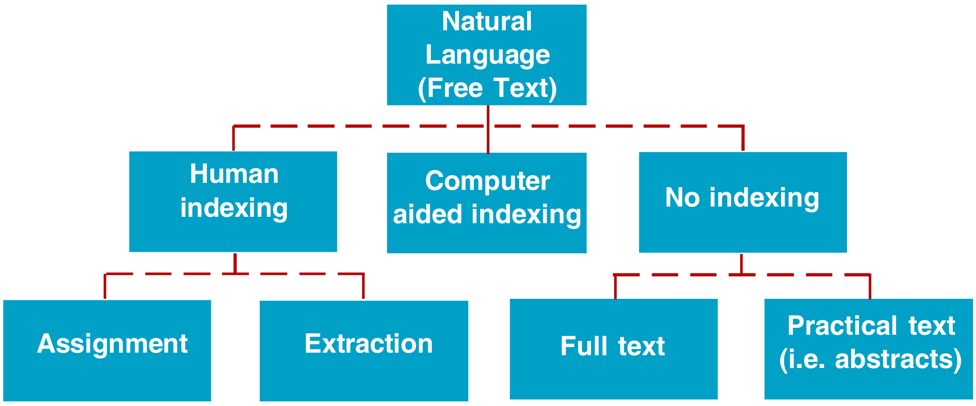


Fig 15.1 Natural Language Indexing

Any term that appears in the title, abstract or text of the document record may be an index term. There is no mechanism to control the use of terms for such indexing. Similarly, the searcher is not expected to use any controlled list of terms. It is human language in which the structure and rules have evolved from usage, usually over a period of time. In search software designed to handle input expressed in natural language, the user may enter the query in the same form in which it would be spoken or written. Any term from the document in question can be used to describe the document.

15.7.2 Free Indexing Language

In free indexing language any term, not only from the document, can be used to describe the contents of a documents. Indexing is 'free' in the sense that there are no constraints on the terms that can be used in the indexing process. Free language indexing is distinct from natural language indexing in that natural language indexing is constrained by the language of the document being indexed; free language indexing does not even recognize these constraints. Free language indexing may be conducted by humans or computers. When executed by humans with a sound knowledge of a subject and its terminology, free language indexing can result in an index which is both consistent in the assignment of index terms, and which matches the perspective of users.

However successful, free language indexing is very dependent upon the skills of an individual indexer. Computerized free language indexing is, for all practical purposes, the same as natural language indexing.

It is the nature of a free indexing language that any word or term that suits the subject may be assigned as an indexing term. The terms may be machine or human assigned although free language is most common in a machine indexing environment. The computer operates by indexing every word with which it is provided unless it is instructed to do otherwise.

Controlled vocabularies usually improve the accuracy of free text searching, reduce irrelevant items in the retrieval list. Both natural language indexing and to some extent free language indexing are used in producing both printed indexes, computerized databases and databanks.

15.7.3 Controlled Indexing Language

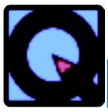
Controlled indexing languages are indexing languages in which the terms used to represent subjects and the process by which terms are assigned to a particular document are controlled or executed by a person. Normally, there is a list of terms which acts as the authority list in identifying the terms that may be assigned to documents. An indexing involves a person assigning terms from this list to specific documents.

There are two types of controlled indexing languages: alphabetical indexing languages and classification schemes. In alphabetical indexing languages, such as, the thesauri and subject headings lists, subject terms are the alphabetical names of the subjects. Control is exercised over which terms are used, but otherwise the terms are ordinary words. In classification schemes, each subject is assigned a piece of notation. The usual objective of assigning notation is to place a subject within a context with respect to other subjects. Both classification schemes and alphabetical indexing languages are used in a variety of contexts. These devices are used in catalogues, indexes to books and periodicals, bibliographies, current awareness bulletins, selective dissemination of information, computerized databases, and databanks, abstract and indexing services, encyclopedias, dictionaries and directories. Classification is also prominent in the physical arrangement of documents.

Normally there is a list of terms, a subject headings list or a thesaurus, that acts as the authority list in identifying terms that may be assigned to documents. An indexing involves the assignation of terms from this list to specific documents. The searcher is expected to consult the same controlled list during formulation of a search strategy. So, it is only approved terms that can be used by the indexer to describe the document.

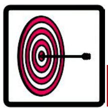
Notes

Compared to free text searching, the use of a controlled vocabulary increases the performance of an information retrieval system.



INTEXT QUESTION 15.5

1. Explain the term 'natural indexing language'.
2. What is the nature of a free indexing language?
3. Describe a Controlled indexing language.



WHAT YOU HAVE LEARNT

- The term 'information retrieval' was coined by Kelvin Mooers in 1950.
- Information retrieval is the activity of obtaining information resources relevant to an information need from a collection of information resources.
- The term information retrieval was earlier used to mean retrieval of bibliographic information from stored document databases.
- Information storage and retrieval, information organization and retrieval, information processing and retrieval, text retrieval, information representation and retrieval and information access are different connotation of information retrieval.
- A library fulfills its function of information retrieval by maintaining some system for searching information out of documents from its collection.
- Modern information retrieval systems deal with storage, organization and access to text, as well as multimedia information resources.
- The major objective of an IRS is to retrieve the information either the actual information or through the documents containing the information surrogates – that fully or partially match the user's query.
- The first librarian to consider the detailed arrangement by subject was Melvil Dewey.
- Natural indexing language is not really a separate language but the 'natural language' or 'ordinary language' of the document being indexed.
- Free indexing language is not a listed language of terms, but the terms are provided by the indexer suitable to describe the contents of a document.

- Controlled indexing language is an indexing language in which the terms used to represent subjects, and the process whereby terms are assigned to a particular document, are controlled or executed by a person.

TERMINAL QUESTIONS

1. What are the objectives of an Information retrieval system?
2. Discuss the major functions of an Information retrieval system.
3. Distinguish natural, free and controlled indexing languages.
4. Explain the use of natural language with help of a diagram.

ANSWER TO INTEXT QUESTIONS

15.1

1. Information retrieval is the activity of obtaining information resources relevant to an information need from a collection of information resources. It is one of the most important functions of a library, because it meets the demands of required information of a user.

15.2

1. The major objective of an information retrieval system, is to retrieve the information. It is, either the actual information or through the documents containing the information surrogates that fully or partially match the user's query.

15.3

1. The library catalogue is a tool which indicates the availability and location of library documents. Catalogue does not provide information contained in the documents like articles in a periodical, etc. This information is provided by indexes, bibliographic abstracts and similar bibliographic tools in the library.

15.4

1. The first librarian to consider detailed arrangement by subject was Melvil Dewey. Librarians prior to Dewey had certainly arranged their libraries in classified order; the classified catalogue was well known. However, these classified arrangements were in broad subject groups; there was no attempt to give the detailed subject specification that Dewey suggested was necessary and useful.

15.5

1. In natural indexing language, the terms are selected from the same document to describe its content.
2. The nature of a free indexing language is that any word or term that suits the subject may be assigned as an indexing term.
3. Controlled indexing language is an indexing language in which the terms used to represent subjects and the process whereby terms are assigned to particular documents, are controlled or executed by a person.

GLOSSARY

Data Retrieval: The retrieval of information whose contents satisfy the information needs of user as per a user query.

Index Term: A pre-selected term which can be used to refer to the contents of a document.

Information Retrieval (IR): To find material (usually documents) that satisfies an information need from within large collections (usually stored on computers).

Keyword: Same as **Index Term**

Query: The expression of the user information need.

Retrieval: The task executed by an information system in response to a user request.

User Information Need: A natural language statement of an informational need of a user.

Vocabulary: Set of all the words in a text

WEBSITES

http://en.wikipedia.org/wiki/Information_retrieval

http://polaris.gseis.ucla.edu/pagre/is277.html

http://nlp.stanford.edu/IR-book/

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16

INFORMATION RETRIEVAL TOOLS: CATALOGUES, INDEXES, SUBJECT HEADING LISTS

16.1 INTRODUCTION

In the previous lesson, you have studied about information retrieval system which is designed to retrieve documents or information required by the users. You have learnt that the IRS should make the right information available to the right user at the right time. Information retrieval tools are basic building blocks for a system that organize recorded information collected by information organizations. This is to establish control of contents for information use as well as for promotion of users' ease of access. The basic information retrieval tools include: bibliographies, catalogues, indexes, finding aids, registers, online databases, etc. In this lesson, you will be introduced to information retrieval tools, viz. catalogues, indexes, subject heading lists and thesauri with examples.

16.2 OBJECTIVES

After studying this lesson, you will be able to:

- explain the use of various information retrieval tools, viz. catalogues, indexes and lists of subject headings;
- define subject cataloguing;
- describe the controlled indexing language;

- illustrate types of controlled indexing languages like lists of subject headings and thesauri; and
- explain different types of indexes, viz. book index, author index, title index, and subject index.

16.3 INFORMATION RETRIEVAL TOOLS

In order to organize knowledge, librarians and information professionals have to create a variety of tools. Traditionally, the tools of information retrieval have been catalogues, bibliographies and printed indexes. Presently, computerized databases and their indexes are also important in the organization of knowledge. These are gradually replacing the traditional tools in a number of applications. At this point, the traditional tools and the computer based tools provide a unified approach to the organization of knowledge which are discussed in the following sections.

16.3.1 Catalogues

Catalogues are the windows to the library collection. A catalogue is the record of the collection in the library. It is also a systematic arrangement of items in an alphabetical or other logical order including brief description. A library catalogue is a list of books and other reading material available in a particular library. The card catalogue has been a familiar sight to library users for generations. But it has been effectively replaced by the online public access catalog (OPAC). The library catalogue of one particular library alone may be available in different physical forms to cover different periods of time. For example, an early catalogue may be in card form, and later superseded for recent documents by an online catalogue.

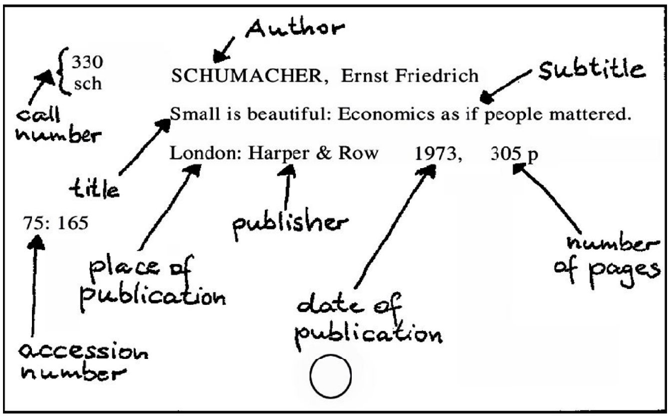

Fig 16.1: Snapshot of Library Catalogue Card

A library catalogue comprises of a number of entries, each entry representing or acting as a surrogate for a document as shown in Fig16.1 There may be several entries per document, or merely one. The types of catalogues found in libraries include the author, title, author/title and subject catalogues as given below.

- **Author catalogues** contain entries with authors' names as the heading. Authors may be persons or corporate bodies and the term author is normally extended to include writers, illustrators, performers, producers, translators, and others with some intellectual or artistic responsibility for a work.
- **Title catalogue** has entries with title as the heading. Some libraries and information centers make title entries for all items being indexed, but in other situations title entries are made selectively for only one type of material.
- **Author/Title catalogues** contain both title and author entries. As both titles and authors' names are in alphabetical order, it is easy to file together authors' names and titles as headings.
- **Subject catalogues** have an indication of the subject of the documents being indexed as their headings. The entries are arranged in an appropriate systematic order. There are two significantly different types of subject catalogues, (i) *Alphabetical subject catalogues* have headings which are words or index terms designed to summarize the subject content of the document. For example, car, lawyers. These entries are arranged alphabetically, according to the subject heading, and (ii) *Classified subject catalogues* have headings on entries which are classification symbols, for example 020 (Library science), 200 (religion), which have been drawn from a classification scheme (Dewey Decimal Classification). In a classification scheme, each subject is allocated a piece of notation, and that notation is used to represent the subject. The headings will be arranged according to the filing sequence of the notation.

The catalogues that have been described above are in single sequence. A catalogue for a complete library collection will normally combine a number of these single sequence catalogues. As you have already studied in Lesson 10, there are two types of catalogue, namely a classified catalogue and a dictionary catalogue.

- **Classified catalogue** is a catalogue with three or four separate sequences, (i) an author/title catalogue or index (or separate author and title catalogue), (ii) a classified subject catalogue, and (iii) a subject index to the classified catalogue.
- **Dictionary catalogue** is a catalogue with only one sequence which has author, title and alphabetical subject entries interfiled. As all of the headings are in alphabetical order, it is possible to file together entries regardless of the nature of their heading.

16.3.2 Indexes

An index is essentially a filter or pointer, or indicator, or a systematic guide to the items contained in, or concepts derived from a collection. Another dictionary definition is that an index is an alphabetical list of terms usually at the end of a book along with the page number where the term appears in the book. Subject indexing is a classification process. On the basis of their subject matter, we group together (perhaps physically, as in the classified arrangement on library shelves) similar subject documents and separate them from other documents. Then we label these classes of related documents in order to maintain the established groups, and to refer to them. In other words, we name the classes and the names we give to them are our index terms.

16.3.3 List of Subject Headings

In traditional library practice, when a controlled vocabulary is set up in the form of an alphabetical listing of index terms, the individual terms are known as *subject heading* and the controlled vocabulary as a *list of subject headings*. Subject headings lists are useful to understand the relationship among concepts to a certain degree, besides their application in indexing.

Subject headings lists are highly valuable for indexing. Subject headings are provided in the catalogue entries to provide subject access to information. Cataloguers depend on Lists of Subject Headings from which they can assign subject headings to the catalogued documents. The conceptual relationships are indicated in the list and the choice of terms and preference are given. In recent decades, these lists have also introduced many thesaurus features. The *Library of Congress Subject Headings (LCSH) List* is one of the best tools for indexing and retrieval. The *Sears List of Subject Headings (SLSH)* is a shorter version useful for smaller libraries. *Medical Subject Headings (MESH*) and *Subject Headings in Engineering (SHE)* are some of the other specialized ones highly used. In the Social sciences, the *Public Affairs Information Service (PAIS) Subject Headings List* is extensively used.

INTEXT QUESTIONS 16.1

1. Define a library catalogue.
2. Which are the different types of catalogues commonly found in libraries?
3. Explain an Index.
4. What do you understand by the term ‘Subject headings lists’?
5. Mention any three subject heading lists.

16.4 SUBJECT CATALOGUING

Subject cataloguing deals with what a book or other library item is about. The purpose of subject cataloguing is to list under one uniform word or phrase all the materials on a given topic that a library has in its collection. A subject heading is that uniform word or phrase used in the library catalogue to express a topic. The use of authorized words or phrases only, with cross-reference from unauthorized synonyms, is the essence of bibliographic control in subject cataloging.

As mentioned above, subject cataloguing is the process of preparing subject entries for documents and organizing them for subsequent retrieval. It involves assignment of subject headings and references like *see* and *see also,* that helps in retrieval of documents from the catalogue in cases where users request for documents on specific subjects.

16.4.1 Objectives

Subject cataloguing has a lot of advantages with regard to retrieval of information from documents, when the user's approach is only to find information if a subject is known. It enables users seeking information to identify and provide access to all the documents on a subject. It also brings together all the related materials on a subject at one place, thus making things easier for the users. Subject cataloguing also enables access of materials if the users are using various kinds of vocabulary, i.e., synonyms, homonyms, etc. Besides this, user can always retrieve the latest information as all related information on a subject is at one place.

When we index using a classification schedule as controlled vocabulary, we assign class labels to a document to represent its subject matter. For convenience, however, we use class number in place of the natural language terms. The process has thus become known as classification, whereas the assignment of subject headings is generally referred to as *subject indexing* or *subject cataloguing*.

16.5 INDEXING LANGUAGES

Indexing language is the language used to describe a subject or other aspects of information in a library catalogue or an index. Indexing language is defined as- 'a list of terms or notations that might be used as access points in an index.' An indexing language may also be referred to as a retrieval language. As discussed in lesson 15, there are three main types of indexing languages:

- Controlled indexing language - Only approved terms can be used by the indexer to describe the document
- Natural language indexing language - Any term from the document in question can be used to describe the document.
- Free indexing language - Any term (not only from the document) can be used to describe the document.

In this lesson, controlled indexing language is discussed in detail.

16.5.1 Controlled Indexing Language

Control is necessary in respect of terms used as subject identifiers in a catalogue or index, because of the variety of natural languages. Such control may involve barring of certain terms from use as headings or access points in a library catalogue or an index. The terms which are to be used are specified and the synonyms recognized and as far as possible are eliminated. Preferred word forms are noted. The list of terms, thus, prepared constitutes what is called *controlled indexing language*.

Controlled indexing languages are indexing languages in which both the terms that are used to represent subjects, and the process whereby terms are assigned to a particular document are controlled or executed by a person. Normally there is a list of terms which acts as the authority list in identifying the terms that may be assigned to documents, and indexing involves a person assigning terms from this list to specific documents. There are two types of controlled indexing languages, namely, alphabetical indexing languages and classification schemes. In alphabetical indexing languages, terms are embodied in thesauri and subject headings lists. The subject terms are the alphabetical names of the subjects. Control is exercised over terms that are used, otherwise the terms are ordinary words. In classification schemes each subject is assigned a piece of notation. The usual objective of assigning notation is to place a subject within a context with respect to other subjects. Both types of device can be found applied in catalogues, indexes to books and periodicals, bibliographies, current awareness bulletins, selective dissemination of information, computerized databases and data banks, abstracting and indexing services, encyclopedias, dictionaries and directories. Classification is also prominent in the physical arrangement of documents. There are different examples of controlled Indexing languages, viz. Lists of Subject Headings, Classification schemes, Thesauri, Thesaurofacet and Classaurus.

Lists of subject headings and thesauri are explained below with examples.

16.5.1.1 Lists of Subject Headings

The purpose of subject headings is to give the cataloguer a way to describe the content of materials in the library. Many times this can be done with a single word, such as ARCHITECTURE. Sometimes, the concepts that are covered require subject headings that can provide further definition, or a more specific definition of the content. Subject headings can also have subdivisions that help to clarify the meaning or focus of the subject term. Some examples of lists of subject headings are:

(a) Library of Congress List of Subject Headings (LCSH)

The *Library of Congress Subject Headings (LCSH)* comprises a thesaurus of subject headings, maintained by the *United States Library of Congress* for use in bibliographic records. LCSHs are applied to every item within the library's collection, and facilitate access to items in the catalogue that pertain to similar subject matter.

LCSH was first published as Subject Headings used in the Dictionary Catalogues of the *Library of Congress (LC)* between 1909 and 1914. Later on supplements were published followed by the second edition in 1919. The List is in its 33rd edition at present (Fig16.2), which was published in 2011.

LCSH system was originally designed as a controlled vocabulary for representing the subject and form of the books and serials in the *Library of Congress* collection. The main purpose of LCSH is to provide subject access points to the bibliographic records contained in the Library of Congress catalogues. LCSH is now used as a tool for subject indexing of library catalogues in general. It has also been used as a tool in a number of online bibliographic databases.

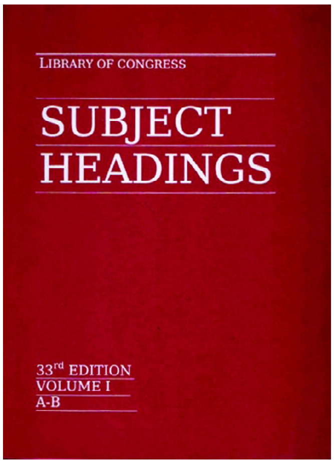

Fig 16.2: Snapshot of Library of Congress Subject Headings

LCSH has become a tool for subject indexing of library catalogues in general. There are four types of term relationships in LCSH.

i) Equivalence relationships

ii) Hierarchical relationships

iii) Associative relationships, and

iv) General and Specific references.

LCSH provides useful reference guide for the user and also to the library reference staff. LCSH is the only subject headings list accepted as the worldwide standard. LCSH is the most comprehensive list of subject headings in print in the world and provides an alphabetical list of all subject headings, and cross-references.

(b) Sears List of Subject Headings (SLSH)

The *Sears List of Subject Headings (SLSH)* owes its name to its originator Minnie Earl Sears. The first edition in 1923 was published as List of Subject Headings based on *Library of Congress List of Subject Headings* (LCSH) designed for small and medium sized libraries. She edited the List till its 3rd edition in 1933.

SLSH is a thesaurus like database delivering a core list of headings, together with patterns and examples to guide the cataloguer in creating further headings as needed. Since the first edition in 1923, the *Sears List* has served the unique needs of small and medium sized libraries, suggesting headings appropriate for use in their catalogues and providing patterns and instructions for adding new headings as they are required. The successive editors of the List have faced the need to accommodate change while maintaining a sound continuity. The new and revised headings in each edition reflect developments in the material catalogued, in the use of the English language, and in cataloguing theory and practice. The aim is always to make library collection as easily available as possible to library users.

SCSH has got a new face since the 15th edition, published in 1994. Since then the editions have been coming quite regularly viz., 16th in 1997, 17th in 2000, 18th in 2004, 19th in 2007 and 16th in 2010 (Fig. 16.3). and the new face is due to the change in format that follows the NISO standards for thesauri. SCSH labels the references BT, NT, RT, SA, Use and UF for broader terms, narrower terms, related terms, see also, use and used for.

a) **NT (Narrower Term)** refers to more specific headings than the boldface heading

For Example : Birds
NT Pigeon

b) **BT (Broader)** refers to more general subject headings. These headings would be useful if you need to broaden your topic.

For Example : Applied Psychology
BT-Psychology

c) **RT (Related Term)**. These terms can provide ideas of other terms related to the topic.

For Example : Applied Psychology
RT-Educational Psychology
RT-Social Psychology

d) **USE and UF (Used For)** refer to preferred and non-preferred subject headings.

For Example : Chennai
UF Madras

For Example : Madras
USE Chennai

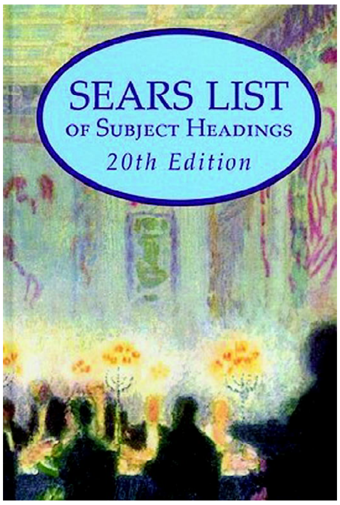

Fig.16.3: Snapshot of Sears List of Subject Headings

16.5.1.2 Thesaurus

The dictionary meaning of the word 'thesaurus' is 'a collection of words put in groups together according to likenesses in their meaning rather than an

alphabetical list.' However, in library and information science parlance the word thesaurus means an authoritative list showing terms which may or may not be used in a catalogue or index to describe concepts. Technically, a 'thesaurus' is defined as 'a compilation of words and phrases showing synonymous, hierarchical, and other relationships and dependencies, the function of which is to provide a standard vocabulary for information storage and retrieval systems'. In a thesaurus, each term is usually given together with terms which are related to it in a number of ways.

Information retrieval thesauri are based on three types of relationship among concepts, viz. equivalence, hierarchical and associative relationships.

The thesauri basically serves as a controlled vocabulary used for indexing and searching of information in an information storage and retrieval system. There are several examples of thesauri. The *Engineering Joint Council (EJC) Thesaurus* and the *Thesaurus of Engineering and Scientific Terms (TEST)* are among the thesauri used for scientific and engineering subjects. In the social sciences, the *Educational Resources Information Center (ERIC) Thesaurus* is extensively used. Few others subject thesauri are *INIS Thesaurus, INSPEC Thesaurus* and *AGROVOC Thesaurus.*

INTEXT QUESTIONS 16.2

1. What is subject cataloguing.
2. List the types of Indexing languages.
3. What do you understand by Controlled indexing languages?
4. How many types of term relationships are present in 'Library of Congress Subject Headings'?
5. Who is the originator of 'Sears List of Subject Headings'?
6. Define a 'thesaurus'.

16.6 TYPES OF INDEXES

Indexing is broadly of two kinds, namely, derived and assigned indexing. Both are different so far as the representation of contents of documents is concerned. In derived indexing, index terms are derived directly from the document. No attempt is made to use an indexer's own knowledge of the subject or other guides. On the other hand, in assigned indexing, an indexing language is used for both input and query formulation. In the former, the index terms are often

derived from the title or the text, whereas in the latter, terms may be assigned to indicate a subject. Types of indexes are explained below.

16.6.1 Book Index

Book indexes are usually found at the back of the book. They list, in alphabetical order, specific referenced materials which is included in the book, giving page numbers or other information to assist readers in locating the material. Many book indexes are predominantly lists of subject terms.

16.6.2 Author Index

The index which has entries under authors' names in alphabetical sequence is called author index. It is the index where the works of a number of authors are listed in one index. An author index provides access to a document via authors' names.

16.6.3 Title Index

In the index which has entries under titles in alphabetical sequence is called title index. It is also an alphabetically arranged list of the titles of the works covered in a serial or non-serial publication. Title and author indexes are sometimes combined.

16.6.4 Subject Index

A subject index has alphabetical terms or words as headings. These terms represent concepts or subjects. Entries are arranged in alphabetical order according to the letters in the heading.

INTEXT QUESTION 16.3

1. What is an assigned index?
2. Differentiate between an author and a subject index.

WHAT YOU HAVE LEARNT

- Information retrieval tools are basic building blocks for a system that will organize recorded information that is collected by libraries, archives, museums, etc.

- The basic information retrieval tools include: bibliographies, catalogues, indexes, finding aids, registers, online databases, etc.
- Library catalogue is a list of books and other reading materials available in a particular library.
- The types of catalogues commonly found in libraries are: author, title, author/title, and subject catalogues.
- There are two types of catalogues, namely, classified catalogue and dictionary catalogue.
- An index is a filter or pointer, or indicator, or more fully, a systematic guide to the items contained in, or concepts derived from a collection.
- Subject indexing is a classification process.
- Subject headings lists are useful to understand the relationship among concepts to a certain degree, besides their application in indexing. Subject headings are provided in the catalogue entries to provide subject access to information.
- Indexing language is defined as a list of terms or notations that might be used as access points in an index. An indexing language may also be referred to as a retrieval language.
- Indexing languages may be of three distinct types: (i) Controlled indexing language, (ii) Natural indexing language, and (iii) Free indexing language.
- Controlled indexing languages are indexing languages in which both the terms that are used to represent subjects, and the process whereby terms are assigned to a particular document, are controlled by an indexer.
- There are two types of controlled indexing languages: alphabetical indexing languages and classification schemes. Classification is also prominent in the physical arrangement of documents.
- The Library of Congress Subject Headings (LCSH) comprises a thesaurus of subject headings, maintained by the United States Library of Congress for use in bibliographic records.
- The Sears List of Subject Headings is a thesaurus-like database delivering a core list of headings.
- Thesaurus means an authoritative list showing terms which may and sometimes may not be used in a catalogue or index to describe concepts. In a thesaurus, each term is usually given together with terms; which are related to it in a number of ways.

- Different types of indexes are book index, author index, title index and subject index.

TERMINAL QUESTIONS

1. Mention different tools of information retrieval?
2. What is the difference between 'Classified catalogue' and 'Dictionary catalogue'?
3. What do you understand by the concepts 'alphabetical indexing languages' and 'classification schemes?
4. Explain in brief about LCSH and SLSH.
5. Briefly explain different types of index.

ANSWER TO INTEXT QUESTIONS

16.1

1. Library catalogue is a list of books and other reading materials available in a particular library.
2. There are four types of catalogues commonly found in libraries, such as: author, title, author/title, and subject catalogues.
3. Index is an alphabetical list of terms, usually at the end of a book along with the page number where the term appears in the book.
4. Subject headings lists are useful to understand the relationship among concepts to a certain degree, besides their application in indexing.
5. The *Library of Congress Subject Headings (LCSH) List* is one of the best tools for indexing and retrieval. The *Sears List of Subject Headings (SLSH)* is a shorter version useful for smaller libraries. *Medical Subject Headings (MESH)* and *Subject Headings in Engineering (SHE)* are some of the other specialized ones highly used.

16.2

1. Subject cataloguing deals with what a book or other library material is about. The assignment of subject headings is generally referred to subject indexing or subject cataloguing. Purpose of subject cataloguing is to list

under one uniform word or phrase, all the material on a given topic that a library has in its collection

2. Indexing languages are of three distinct types: (i) Controlled indexing language, (ii) Natural indexing language, and (iii) Free indexing languages.

3. Controlled indexing languages are indexing languages in which both the terms that are used to represent subjects, and the process whereby terms are assigned to a particular document, are controlled or executed by an indexer.

4. There are four type of term relationships in LCSH, (i) Equivalence relationships; (ii) Hierarchical relationships; (iii) Associative relationships; and (iv) General and Specific references.

5. Minnie Earl Sears

6. Thesaurus is a compilation of words and phrases showing synonymous, hierarchical, and other relationships and dependencies, the function of which is to provide a standard vocabulary for information storage and retrieval systems.

16.3

1. In an assigned index the index terms are assigned by an indexer by using a guide or based on his own knowledge of the subject.

2. An index which has entries under authors' names in alphabetical sequence is called author index. A subject index has alphabetical terms or words as headings. These terms represent concepts or subjects.

GLOSSARY

Assigned indexing : The system of indexing in which terms are assigned by the indexer on the basis of the conceptual relations existing between them.

Classaurus : An elementary category-based faceted systematic scheme of hierarchical classification in the verbal plane having all the necessary and sufficient features of a conventional alphabetical, thesaurus excluding the enumeration of the Related terms (RT).

Derived indexing : The system of indexing in which terms are derived from the terms used in the text.

Index : A tool that exhibits the analyzed contents of a bibliographic entity or group of such entries, arranged in a systematic way, so that retrieval of specific items of information could be done easily.

Indexing : Indexing is the process whereby indexes and associated tools for the organization of knowledge are generated. Indexing can be done both manually as well as with the help of a computer. Subject indexing comprises three stages: familiarization with subject, analysis and assigning of terms to represent concepts using an indexing language.

Indexing Language : It is a set of items (vocabulary) and devices for handling the relationships between them in a system for providing index descriptions. Indexing language is also referred to as a retrieval language.

Subject Headings List : A list of subject headings or terms, including references, to be used as a standard cataloguing or indexing.

Thesaurofacet : Thesaurus which has a classified and alphabetical part.

Thesaurus : It is a compilation of words and phrases showing synonyms, hierarchical and other relationships and dependencies, the function of which is to provide a standard vocabulary of information storage and retrieval systems.

Vocabulary Control : A controlled set of terms used to represent the subjects of documents in indexing, and to search for these documents in a particular system.

WEBSITES

http://en.wikipedia.org/wiki/Controlled_vocabulary

http://www.slideshare.net/ImeAmorMortel/indexing-10954481

http://www.loc.gov/aba/cataloging/subject/weeklylists/

http://www.ebscohost.com/public/sears-list-of-subject-headings

17

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SEARCH TECHNIQUES: BASIC AND ADVANCED

17.1 INTRODUCTION

Searching is the activity of looking thoroughly in order to find something. In library and information science, searching refers to looking through records thoroughly in order to find desired information. You have already studied retrieval tools like catalogues, indexes, etc., for retrieving information. In this lesson, you will learn need and ways of searching organized information for retrieval purposes. You will also be exposed to fundamental aspects of search techniques for information retrieval from electronic sources.

17.2 OBJECTIVES

After studying this lesson, you will be able to:

- define search techniques;
- explain organization of words in a dictionary;
- use dictionary, numeric and numeric/classified techniques for arranging and retrieving library material;
- define search engines;
- identify search process and design a search query;
- know the role of search operators;
- define Boolean logic;
- understand types of search;

- define, explain and differentiate the field based and full text search with examples.

17.3 SEARCH TECHNIQUES

The search technique is a mechanism through which one can find relevant information from information systems. The information system may be in-house or online. In-house information system is one where information is stored within the scope of an organization for retrieval purposes. The online information system is a system where electronic information sources are stored remotely and are accessible through a communication mechanism. Most of the online information systems are compatible with World Wide Web (WWW) and are accessible through internet. The in-house information system may have information sources in both printed and electronic form. Thus, storing mechanism and search techniques are two different aspects. We will discuss these two aspects of storage and retrieval of information.

INTEXT QUESTIONS 17.1

1. Define search technique.
2. What is online information system?

17.4 STORAGE MECHANISM

In-house information systems and online information systems are designed to store specialized information or information on a particular theme or subject. Such systems provide their own search mechanisms and a set of guidelines to find specific information. In library and information centers, information is available in both print and electronic form. Given below are some of the storage mechanisms and their role in information retrieval:

(i) Dictionary Arrangement

(ii) Numeric Arrangement

(iii) Classified Arrangement

17.4.1 Dictionary Arrangement

Dictionary arrangement means an arrangement where words are organized in alphabetical order of the language. The alphabetical order is the sequence based on the position of a particular alphabet in the script of the language. For

example, the English language uses roman alphabets and the order is A, B, C, D,…………….Z. Here, the alphabet "A" is at first position, "B" at second and likewise "Z" at twenty sixth position in the sequence. Therefore, the words in dictionary arrangement are organized as per the sequential position of alphabets. For example,

Action
Ante
Apple
Art
Catalogue
Classification
Search
…………….

Here, the first four words start with "A" but their positions are fixed as per the position of second, third or fourth letter. This is followed by another set of two words starting with "C". Hence, the words starting with "C" have been given position after the words starting with "A". Following this process, the words are organized in this arrangement. This mechanism of arrangement is followed for arranging entries in catalogues, which have words as access point. For example, author, title, subject, etc.

17.4.2 Numeric Arrangement

The numeric arrangement is the arrangement where numbers are organized in ascending or descending order. For example,

123.45
234.15
234.51
435.21
541.23
…………………………….

Here, you find that all the numbers have same set of five digits, i.e., 1 to 5, but as per their numeric value, these are organized in ascending order and sequence has been made. In libraries, that follow Dewey Decimal Classification system, you will find that the books are arranged in numeric order on the shelves.

17.4.3 Classified Arrangement

Most of the libraries organize their books on the shelves as per the call number

of books. The call numbers are the combination of class number, book number and collection number. These three numbers may be numeric or alphanumeric as per the scheme, followed by the library. Hence, retrieving books from the shelves becomes easy when we understand the numeric, alphanumeric or classified arrangement. For example, a few call numbers based on DDC scheme have been arranged below as they are arranged on shelves.

321.4 RAM
370.1150954 DEM
370.1523 DES
371 ILL
371.3078 KEM
371.32 NIS
371.397 GRE
371.926 BRA

Another example of information retrieval following these arrangements is taken from a book index. You might have noticed that almost all books have an index at the end. The book index is a list of words/terms alongwith page numbers on which those appear in the text. Depending upon the size and nature of the book, the terms in the book index are organized either in dictionary or classified order. After understanding these arrangements, you can find information on a topic from the book easily.

INTEXT QUESTION 17.2

1. Define dictionary, numeric and classified arrangement.

17.5 SEARCH ENGINE

Searching information from the electronic or digital media is different from the print media. When information is stored in electronic or digital form, user interface is provided to find relevant information from the system. This user interface is a software, which has provisions to accept keywords or terms, representing required information to conduct the search. It brings the result of the search in the format defined in the software. The software meant for searching information from the information system is known as search engine. Hence, we can define a search engine as 'a software, meant for searching information from electronic or digital information domain, on the basis of input given by a searcher that displays the result in user friendly format'.

The input to the search engine is known as search string or query. The query may be a single term or a set of terms representing the information one is looking for. The search engine searches information based on the query and provides a list of sources which match the query. The list is displayed in a format, designed by the search engines. Depending upon the nature of the search engine, the list may contain brief description of information sources, on the basis of which, the searcher may decide to acquire or refer to full record or not.

You might have searched Online Public Access Catalogue (OPAC) of your library or *Library of Congress Online Catalog (LCOC)* or *PubMed* as well as *Google* or *Yahoo* on internet. All are the search engines.

INTEXT QUESTION 17.3

1. Explain a search engine.

17.6 SEARCH PROCESS

The search process is a set of functions which are performed for searching the relevant information effectively. The process follows some basic steps to conduct search and get desired results. These steps are as follows:

(i) Recognise and State the Need

(ii) Development of Search Strategy

(iii) Execution of the Search Strategy

(iv) Review Search Results

(v) Edit Search Results

(vi) Evaluation and Feedback

17.6.1 Recognise and State the Need

It is important for an information professional or searcher to understand the need and the purpose of a search. Information on a topic may be needed for general knowledge, research and development, or for any other purpose. After understanding the need and purpose of the search, a query statement should be developed.

There should be an agreement between the information seeker and the searcher on the search requirements. This agreement leads to formulation of effective search strategy for relevant and effective result.

17.6.2 Development of Search Strategy

The development of the search strategy includes conceptual formulation of query, translation of conceptual formulation into the language of keywords, descriptors or facets, identification of synonym and associated terms, etc. The concept of facet analysis(PMEST), given by Ranganathan as well as the concept of specific subject can be used as an effective tool for designing a query. After this, it is important to select the information domain to be searched like, the OPAC of a library, database or likewise, depending upon requirements.

The search string or query, is the combination of terms, keywords or descriptors, which represent the information. As search strings contain vocabulary, the linguisic features and their implications on the search and retrieval of information have to be analyzed. Here, three aspects, namely, Syntactic Value, Semantic Value and Boolean Operators are to be understood.

a) Syntactic Value

The syntactic value of a search string deals with the kind of formula or connecting symbols through which keywords or terms are connected to represent the concept to be searched by the search engines. We will try to understand the syntactic value of a query by this example. There are two terms, say "poetry" and "Indians" connected by two different connectors,"among" and "by'. Each gives a different meaning, as follows:

(a) 'poetry among Indians'means 'What is the status of poetry among Indians?" Or 'What is the approch of Indians towards poetry?"

(b) 'Poetry by Indians'means, poetry composed by Indians.

b) Semantic Value

The semantic value of a search string deals with the meaning of the string in the context of the required informtion and the interpretation by the search engine. For establishing the meaning of the concept to be searched and understood by the search engines, we use operators as connectors of keywords as permitted by the search engines.We can understand the semantic value of a query through two examples given below:

(i) The query 'contribution of Indian society in mathematics' means the contribution of Indian society in the field of Mathematics.

(ii) The query 'contribution of mathematics in indian society'means contribution of Mathematics in shaping Indian society.

These two examples give us clear perception of the semantic value of a query. The same set of keywords and connectors give different meaning when written in different order.

c) Boolean Operators

Boolean Operators are simple words (AND, OR and NOT) used as conjunctions to combine or exclude keywords in a search. These are used to connect and define the relationship between the search terms. Thus, resulting in more focused and productive results.These three terms are widely accepted by the designers of the search engines. They have well defined meaning while used as operators in information search. The three operators of Boolean logic are the logical sum (+) OR, logical product (x) AND, and logical difference (-) NOT. All the information retrieval systems allow the users to express their queries by using these operators. Let us now understand the implications of these three operators.

OR Operator: The OR operator allows the searcher to specify alternatives among the search terms. When a string is created using OR operator, the search engines retrieve all those resources where any of the terms or keywords connected with 'OR' exist. For example, if we create a search string like, 'student OR education' and search it, then the output of the search will be a list of references of all those resources, available in the system, where either student or education exists.

AND Operator: The AND operator is used to combine two or more terms. When a string is created using AND operator, the search engine retrieves all those resources where all the terms or keyword connected with 'AND'exist. For example, if we design a search string like, 'student AND education'and search, then the output of the search will be a list of references of all those resources, where student and education, both the terms exist.

NOT Operator: The NOT operator is used to exclude the term from a set of resources. For example, if we create a search string like 'student NOT education' and search, then the result of the search will be a list of references of all those resources, available in the system, where term student exists but not education.

You can understand the implications of boolean operators with the graphic representations. Here 'A' represnts a set of students and 'B' represents a set of education in Fig. 17.1

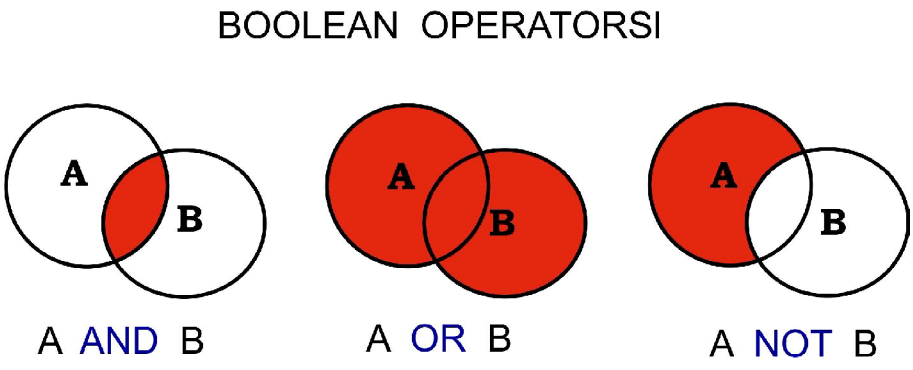

Fig. 17.1: Graphical presentation of the implications of Boolean Operators

INTEXT QUESTION 17.4

1. Define search strategy.

17.6.3 Execution of the Search Strategy

The searcher should have knowledge of data structure adopted by the information system that stores data before executing a search. The system based search engines are designed to search information in a database according to its architecture. Like in OPAC, if we put a query as 'Tagore, Rabindra Nath' and search in author field, then only those records will be retrieved and displayed from the database which have been authored by him. But, if we direct the same query into the title field, then those records will be displayed, in which 'Tagore, Rabindra Nath'appears in the title or a part of the title. This means that the references of materials, written on 'Tagore, Rabindra Nath'will be listed in result.

Depending upon the need and purpose of the search and expertise of the searcher, the search may be conducted using the features of the search engines. Hence a searcher should know the types of search and implications to get effective output. The types of searches are:

a) Field Based Search

b) Full Text Search

c) Truncation Search

d) Proximity Search

e) Limiting Search

f) Range Search

g) Simple Search

h) Advanced Search

(a) Field Based Search

The search conducted on a particular field of the database to get required information is termed as field based search. As you are aware, the complete information of catalogue is stored in different fields in a bibliographic database. If you wish to search an author, direct the search engine to author field or if you wish to search through title or subject, direct the search engine to title or subject field.

If 'Sen, Amartya' is searched in Author field, then the result will show the works authored by him. While, the same search when executed on Title field, the result will show the works on him. For example, a search was conducted on Library of Congress Online Catalogue (LCOC) putting 'Sen, Amartya' as a search string and selected 'author/creator' field to be searched. The result given by the search engine was a list of 7 documents when author/creator was searched, while it gave a list of 157 documents when title field was searched. The images of the search and the results are given below in Figs. 17.2 to 17.5.

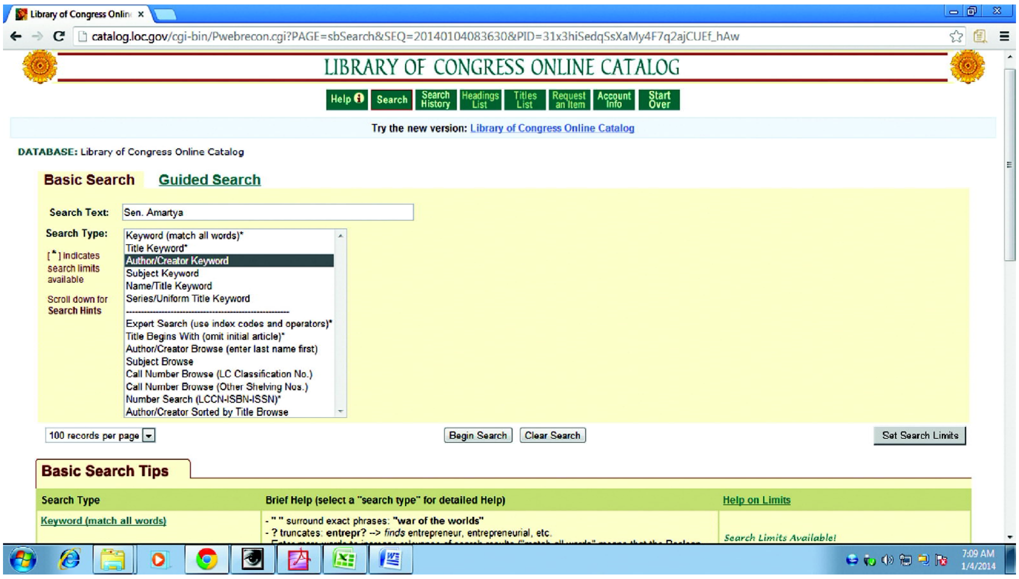

Fig. 17.2: Search on LCOC

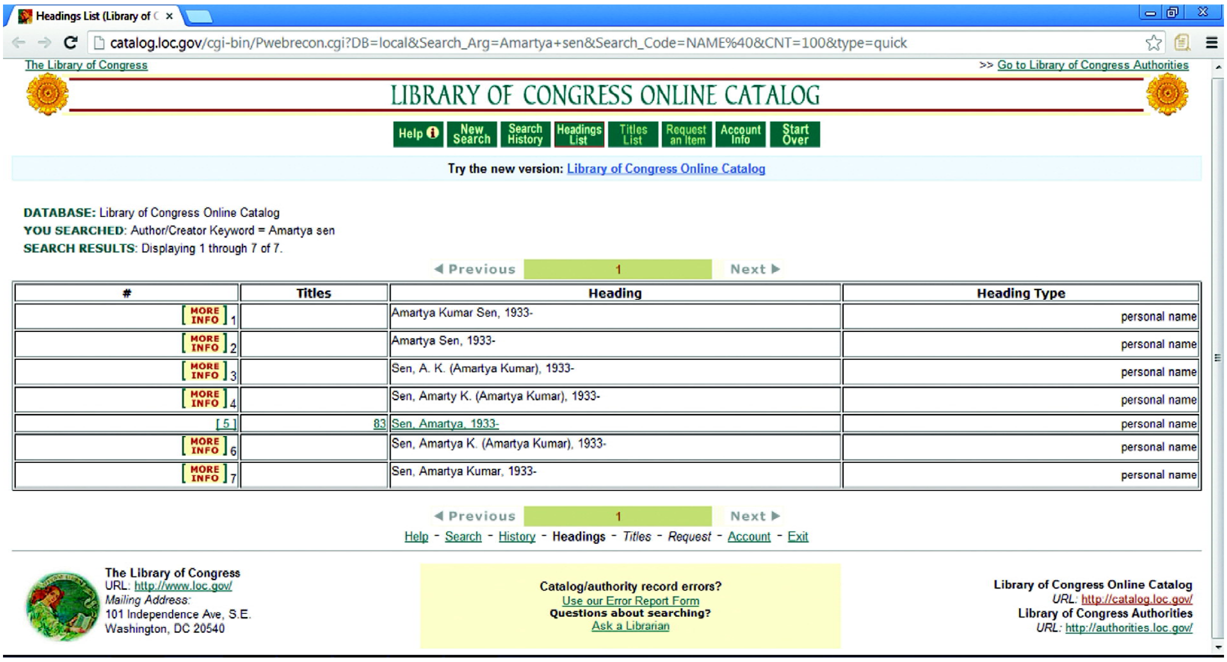

Fig. 17.3: Search on LCOC where Sen, Amartya was searched in author/creator field

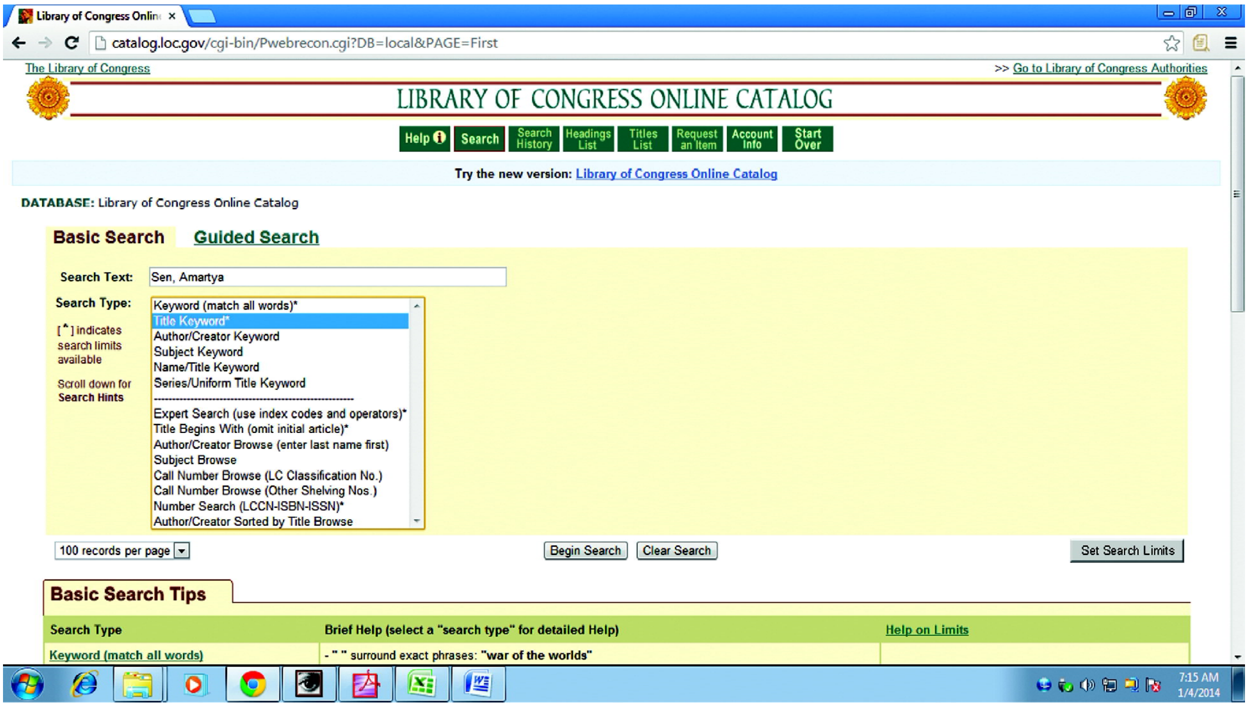

Fig. 17.4: Search on LCOC

Notes

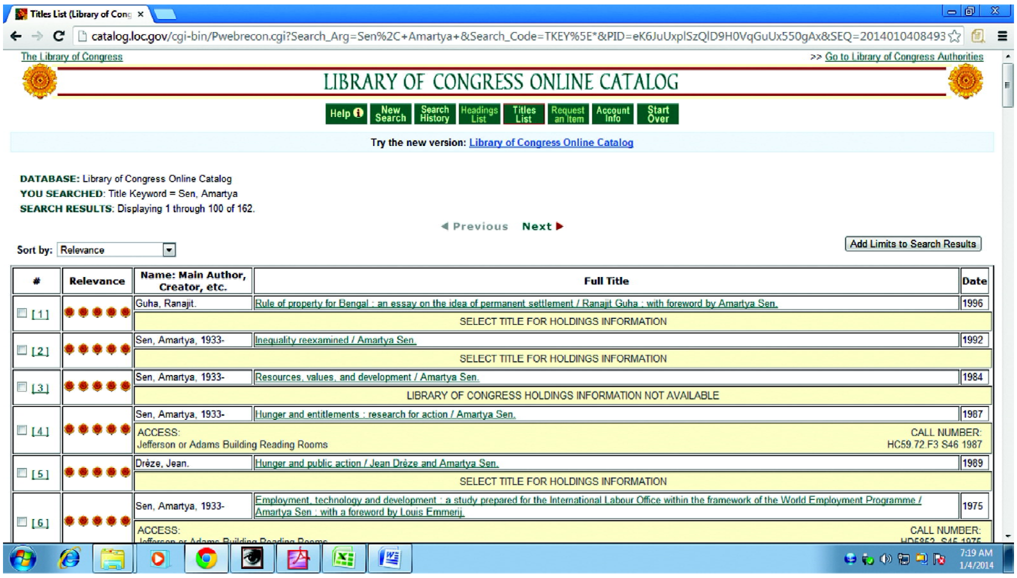

Fig. 17.5: Search on LCOC where Sen, Amartya was searched in title field

(b) Full Text Search

Full text search is a searching mechanism, which conducts the search on each and every field of the database and extracts all those records which match the query. For example, the same search (Amartya Sen) when conducted on LCOC with keyword option, which works as full text search, gave a list of 193 records. This shows that, in full text search the number of hits increased as it extracted all those records which had 'Sen, Amartya'in any fields. The search result is given in Figure-17.6.

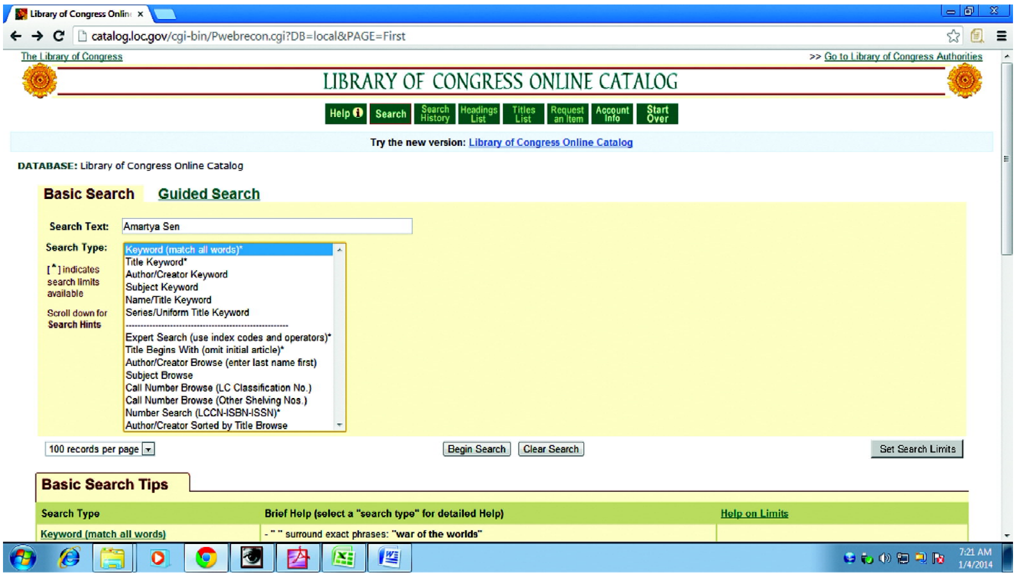

Fig. 17.6: Search on LCOC

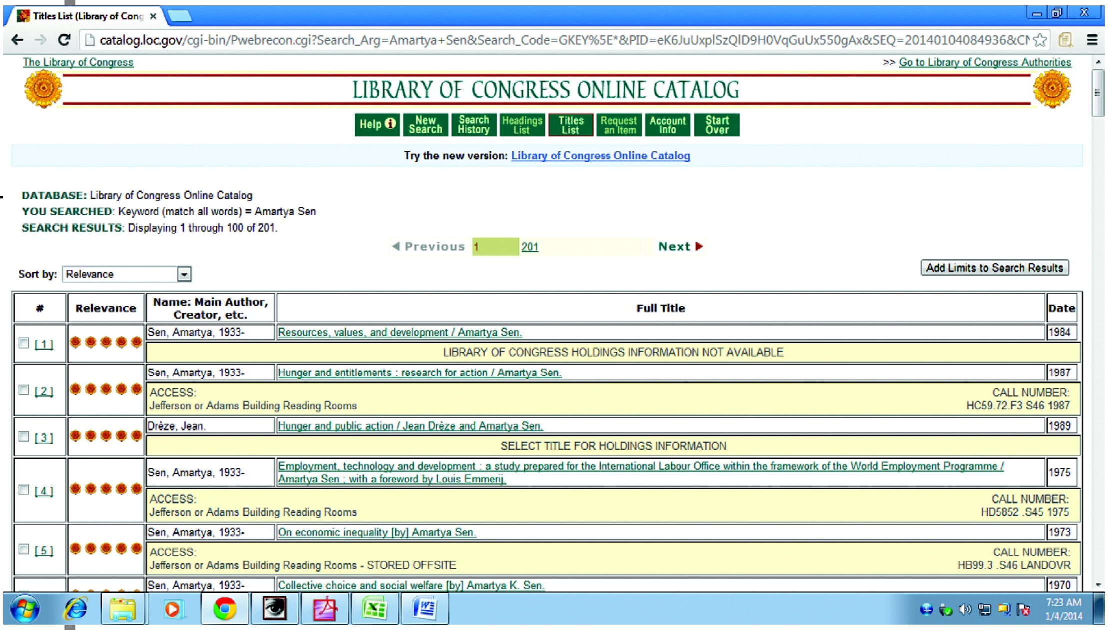

Fig. 17.7: Search on LCOC where Sen, Amartya was searched in keyword match.

(c) Truncation Search

Truncation search, is a search technique, in which, the search is conducted for different forms of a word having the same common root. It is one of the most widely adopted methods in information retrieval system. In this technique, root word is taken with truncation mark and search is conducted. For example, if we search 'India*' then all the records will be retrieved where term 'India' appears full or part of any word. The output will list all the records of the domain having, India, Indian, Indiana, Indianization or likewise.

(d) Proximity Search

The proximity search, is a search technique, which allows the searcher to define the distance of two terms from each other. Whether, the two search terms, should occur adjacent to each other, or, one or more words occur in between the search terms; or the search terms should occur in the same paragraph, irrespective of the intervening words, etc. Different search engines use different set of operators for this purpose.

(e) Limiting Search

In limiting search technique, a searcher limits the string as per the architecture of database and searches different terms of the same string in different fields. For example, if a searcher is searching 'Development as freedom by Amartya Sen' then the string will be broken into two sub-strings, viz.'Development as

freedom'and 'Amartya Sen'. The sub-string 'Development as freedom' will be put in title field and sub string 'Amartya Sen' will be put in author filed and then search will be conducted.

(f) Range Search

Range search technique is a technique,which allows searchers to select records within certain data ranges. This technique is more suitable for numeric data search. The operators and their meaning differ from search engine to search engine. A few commonly used operators are:

- Greater than (>)
- Less than (<)
- Equal to (=)
- Not equal to (|= or <>)
- Greater than or equal to (>=)
- Less than or equal to (<=)

For example, if we put publication year 2000 >=, then the result will list all those resources which have been published 2000 AD onwards.

(g) Simple Search

Simple search is such a technique where a searcher puts keywords in a simple format without understanding the behavior of the search engine or the architecture of the database or the impact of the operators and connectors. Almost all the search engines provide the facility of using simple search technique. The simple search works on the model of Full text search discussed above.

(h) Advanced Search

Advanced search technique is a technique through which a searcher searches the information using different tools and mechanisms to get precise and relevant results. In this technique, a searcher creates the search string using operators and parameters provided by the search engine. Searching information, combining different methods discussed above, also falls in this category. Here, the scope of each and every term of the string may be defined as per facility available in the search engine. We will discuss different aspects of advance search in Lesson 18.

INTEXT QUESTIONS 17.5

1. What is field based search?
2 Explain full text search.
3. Define truncation search.
4. Discuss limiting search.

17.6.4 Review Search Results

The best reviewer of the search results is the user. But the information professionals should also review the search results on the basis of criteria given for evaluating information retrieval systems.

17.6.5 Edit Search Results

The editing of search results involves transformation of the search results into a user friendly format. This may involve arranging the results into a well-organised package, hightlighting the important entities, adding more information to the entities and reformating of information to suit the user's requirements.

17.6.6 Evaluation and Feedback

The evalution of search results involves participation of both, the users and the searchers. The quality and quantity of the results are assessed and if needed, the process may be redefined and restarted if the final result does not satisfy the users' needs.

On the basis of the search process discussed above, a simple model can be given as in Fig. 17.8.

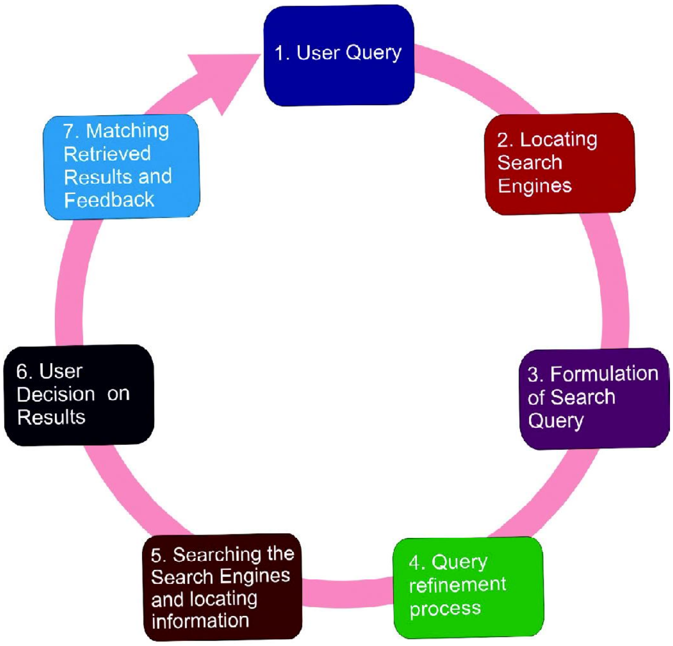

Fig. 17.8 : Search Process Model

INTEXT QUESTIONS 17.6

1. How a search result is reviewed?
2. What is the need of editing search result?

WHAT YOU HAVE LEARNT

- The standard mechanism, called information search techniques is used for retrieving information from any information system.
- The search technique is a mechanism through which, one can find relevant information from information systems. The information system may be in-house or online.
- Storage mechanism can be dictionary, numeric and classified arrangement of information.
- Search process follows a set of functions as:
  - determination of user's need of information search;
  - designing search strategy;

- o selecting the information system to be searched and accordingly the search engine;
- o creating search query or string using keywords and operators which, represents the semantic value of the user's requirements and the syntactic format which the engine interprets;
- o conducting the search;
- o evaluation of the result. If needed, again filter or redefine or restart the search process; and
- o presentation of the search results in a user friendly format.

- For getting relevant and effective search results, a searcher should have knowledge of the types of searches and skills of conducting them.

TERMINAL QUESTIONS

1. Explain search techniques and their need for information retrieval.
2. List the search process and give a brief note on each of the steps.
3. Explain semantic value of a search string.
4. Explain the Boolean operators and their impact while connecting two keywords 'A' and 'B'.
5. How does an advance search differ from a simple search?

ANSWERS TO INTEXT QUESTIONS

17.1

1. The mechanism by which we find relevant information from any information system is known as search technique.
2. The online information system is a system where electronic information sources are stored remotely and are accessible through a communication mechanism.

17.2

1. Dictionary arrangement is an arrangement in which words are organized in alphabetical order of the language. In numeric arrangement, numbers are organized in ascending or descending order. Classified arrangement is an arrangement in which the words or numbers or a mix of both (alphanumeric) are firstly grouped on the basis of some characteristics. Then these are organized in dictionary or numeric or a combination of both orders.

17.3

1. The search engine is a software, meant for searching information from electronic or digital information domain. On the basis of query given by a searcher, the search engine displays the results in user friendly format.

17.4

1. The search strategy is a process of developing conceptual formulation of query, translation of conceptual formulation into the language of keywords, descriptors or facets, identification of synonymous and associated terms, etc.

17.5

1. The field based search is one where search is conducted on a particular filed of the database to get required information.

2. The full text search is a searching mechanism, which conducts the search on each and every field of the database and extracts all those records which match the query.

3. The truncation search is a technique, in which the search is conducted for different forms of a word having the same common root.

4. In the limiting search technique a searcher breaks the string as per the architecture of a database and searches different terms of same string in different fields.

17.6

1. The best way of reviewing the search result is to get feedback of the user. If the user is satisfied with the result then the search may be considered successful.

2. The result displayed by the search engines are not always in the user friendly format. Thus, editing the result in the format which user can understand becomes is necessary.

GLOSSARY

Alphabetical arrangement: Arrangement based on the sequence of the alphabet of a particular language in which terms are written.

Ascending: Increasing order

Descending order: Decreasing order

Information domain: An information system where information or its sources are stored logically for retrieval purpose.

LCOC: Library of Congress(USA) online catalogue

Numeric arrangement: Arrangement of numbers in ascending or descending order

OPAC: Open Public Access Catalogue

PMEST: Personality, Matter, Energy, Space and Time (of Colon Classification)

PubMed: Online database of US National Library of medicine covers citations for biomedical literature from MEDLINE, life science journals and online books. The citation may include links to full-text content from PubMed Central and publishers web sites.

Software: Any computer executable programme like Libsys WINISIS etc.

User interface: A tool which works between user and the system

WWW: World Wide Web is system of interlinked hypertext documents accessed via the Internet. With a Web browser, one can view web pages that may contain text, images videos and other multimedia and navigate between them via hyperlinks.

WEBSITES

http://catalog.loc.gov/help/titles.htm

http://www.ncbi.nlm.nih.gov

http://www.internettutorials.net/basic-search-techniques.asp

http://www.dlib.org/dlib/january97/retrieval/01shneiderman.html

18

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SEARCH TECHNIQUES: WEB BASED SEARCH

18.1 INTRODUCTION

Internet has become the biggest repository of information in the world. It can be considered as a global library where variety of information in different languages and formats is stored in digital form. The volume of information on web is enormous and it has become near to impossible to estimate its size. Because of its size and storing mechanism, finding relevant and precise information has become a difficult task. For searching information from this vast repository, we use search engines. There are thousands of search engines available on internet. For example, if you visit http://www.thesearchen ginelist.com/, you will find a classified list of search engines. This list is category-wise and includes all-purpose search engines in various fields like accounting, blogs, books, legal, medical, etc.

In Lesson 17, you studied basic concepts of search techniques. Here, you will learn various aspects of searching information on web.

18.2 OBJECTIVES

After studying this lesson, you will be able to:

- explain purpose of simple and advanced search techniques;
- develop search string using Boolean logic on a given topic;
- illustrate search string with the help of a diagram;
- give examples of simple search and advanced search on internet;
- identify various Search Engines, viz. Google, Yahoo, Google Scholar;

- identify Search Engines on internet in different vernacular languages;
- illustrate search in specific categories, viz. maps, images; and
- modify search strings to get precise results.

18.3 PURPOSE OF THE SEARCH

People search information on web for various purposes. The best way to begin a search for information is to define information needs of the user. Information need is an individual or group's desire to locate and obtain information to satisfy a conscious or unconscious need.User may need an overview, a comprehensive search, a quick reference or fact, or an in-depth treatment of a topic. Once it is decided what is needed, a source can be selected which is likely to have the desired information. A search strategy is then planned that includes various sources. There is a vast range of sources available to help locate desired information.

18.3.1 Search Engines

A search engine is a software program that searches for websites based on terms referred to as search terms. Internet search engines are thus special sites on the Web that are designed to help locate information stored on other sites. There are differences in the way various search engines work, but they all perform three basic tasks:

- Search the Internet, or select parts of the Internet based on important words,
- Keep an index of the words they find, and where they find them, and
- Allow users to look for words or combination of words found in that index.

18.3.2 Kinds of Web Search

Information need is defined as 'an individual or group's desire to locate and obtain information to satisfy a conscious or unconscious need.' It is this perceived need for information that leads users to use an information retrieval system in the first place. The perceived need for web search can be of three types:

(i) Navigational Search

(ii) Informational Search

(iii) Transactional Search

(i) Navigational Search

A navigational search is a keyword search in which the searcher wishes to go to a specific website, or a web page on a specific site. In other words, here the searcher uses a web search engine to navigate (go to) a website. For example, if you wish to go to the website of the'President of India'.To do so, just type the query 'President of India'in a search engine (say Google) and search the web. The list provided by Google contains a link to the President of India website along with other links.Just by clicking the link, you will reach the website. The result of this search is given in Fig. 18.1.

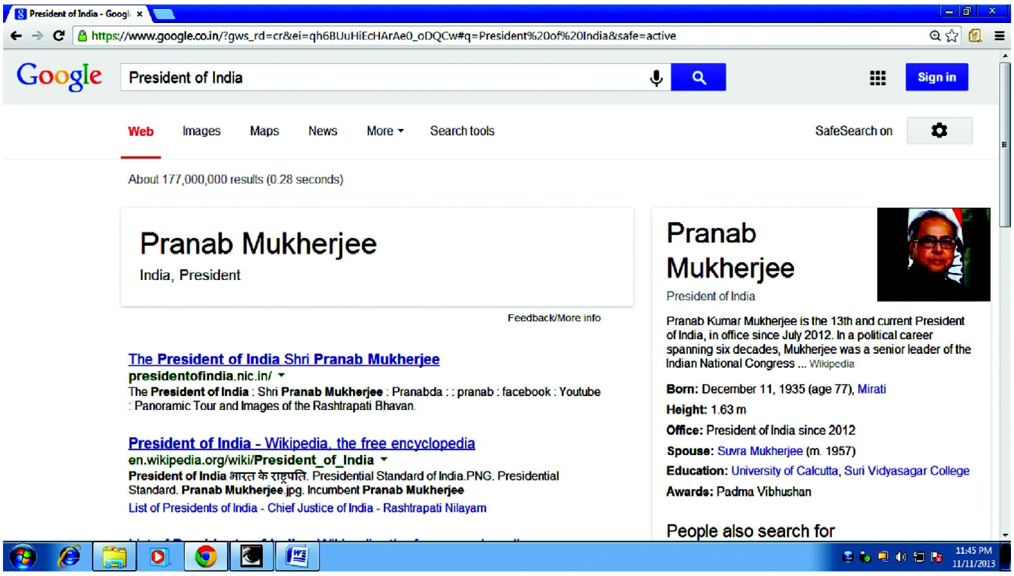

Fig. 18.1: The search result of a Google search on the topic 'President of India'

(ii) Informational Search

The intent of the informational search is to acquire some information, assuming it is available on the internet. This kind of search is conducted for study, research or any other purpose where scholarly information is required. For example, a person wants to find information on a topic 'Career in library and information science'. When the query is put to Google search engine on the web, it provides a list as search results, which contains references of 42,400 hits from across the web. The result is shown in Fig. 18.2.

After analysing the results, we find that the list contains references of different websites. The websites are of academic, research, commercial and many other institutions as well as organisations.

Search of specialized information systems, such as, LCOC, PubMed, OPAC of a particular library or likewise also fall in this category.

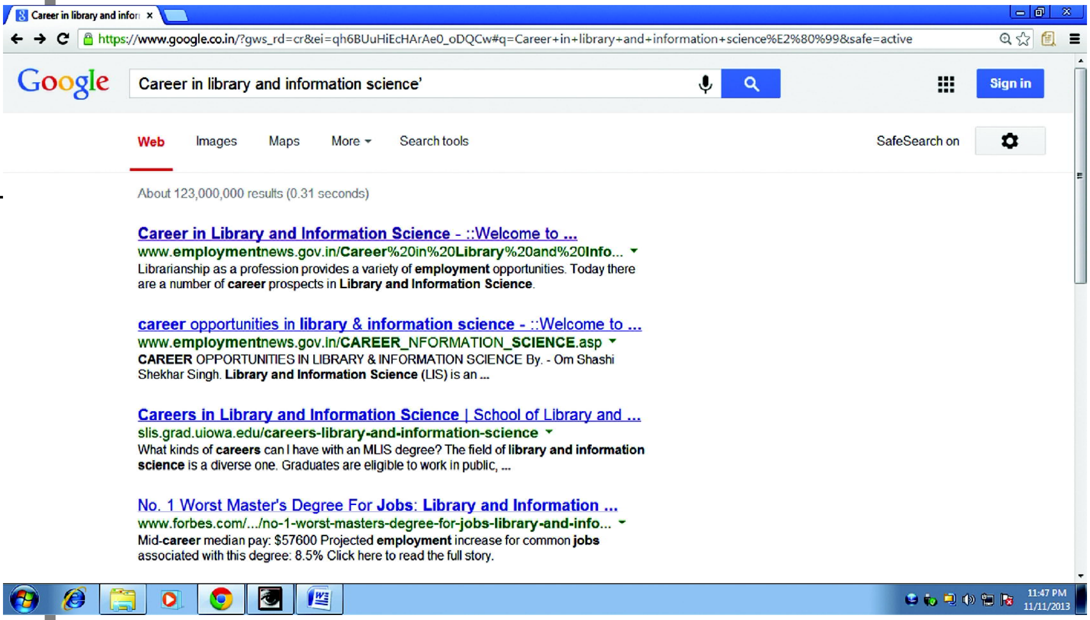

Fig. 18.2: The search result of a Google search on the topic'Career in library and information science'

(iii) Transactional Search

Transactional search intends to reach a website for further interaction or some other activities. The purpose of such queries could be shopping, downloading various types of files, as image, song, movies, etc. and various web mediated services like gaming, etc. For example, a person can go to websites where one can buy online tickets for airplane, train, bus, movie, etc.

Searching information on web for navigational and transactional search is general in nature. But searching for informational purpose needs certain level of knowledge and skills.

INTEXT QUESTIONS 18.1

1. Define a search engine.

2. Describe the purpose of informational search on internet?

18.4 SEARCHING INFORMATION ON INTERNET

Searching information on internet is both an art and a science. One can get expertise in finding relevant information on internet. Information in the form of simple websites, databases, books, maps, journal articles, audio-visual materials, multimedia, or any desired topic can be found. As information in several formats is available on internet, finding through a particular type of

search technique or searching with the help of one search engine is not possible. In the Lesson 17, you have studied the search process, different aspects of search techniques, designing search string or query, etc. In this lesson, we will apply these aspects for searching information on internet. We can search information with the help of **simple** or **advanced** search techniques as explained below:

18.4.1 Simple Search Technique

Simple search technique is a mechanism of finding information on internet for beginners. Here, we select keywords and make a simple string or query. This query when submitted to any search engine provides a list of references of all those resources which have these keywords in their content. These keywords may appear in any part of the document, that is, title, body text or anywhere else. As the volume of information on internet is very large, huge number of references are provided by the search engines in simple search mechanism. For example, a search was conducted on www.google.com with a string 'Career selection after senior secondary' and result showed about 4,460,000 items. Fig. 18.3 shows the result of this search.

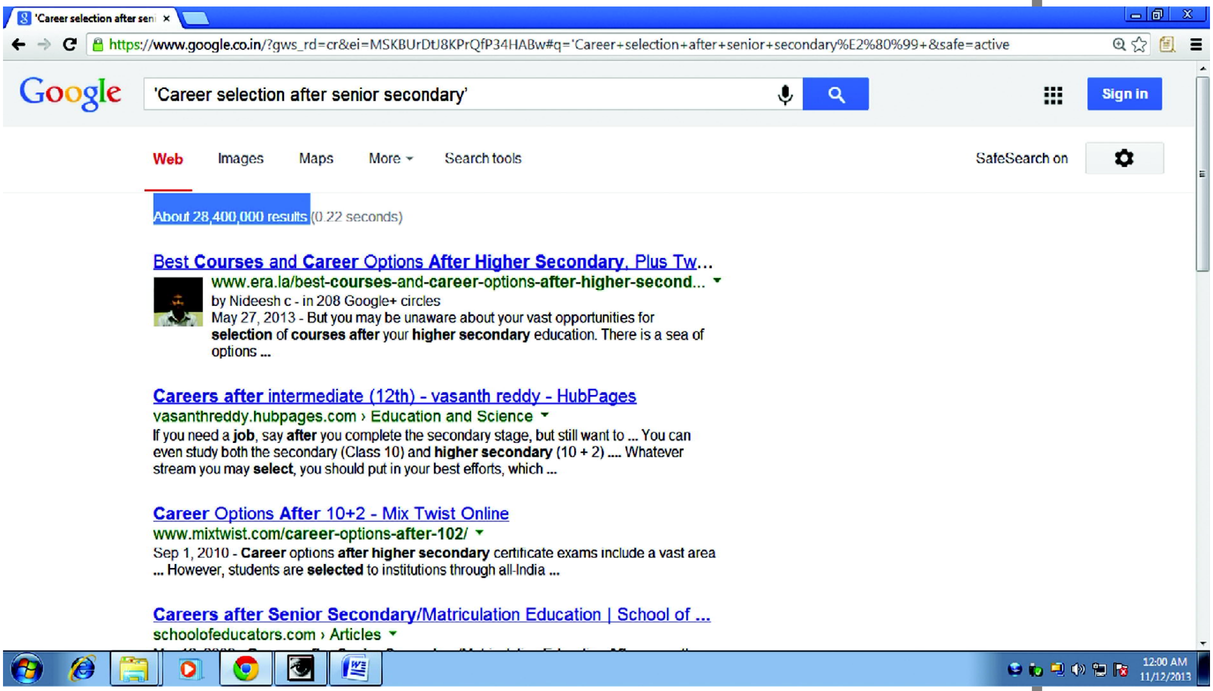

Fig. 18.3: Search Result of search 'Career selection after senior secondary' on Google

Further, the same concept was redesigned as 'Career selection after 12th' and searched through the same search engine, Google. The search showed about 8,580,000 results. Fig. 18.4 shows the result of this query.

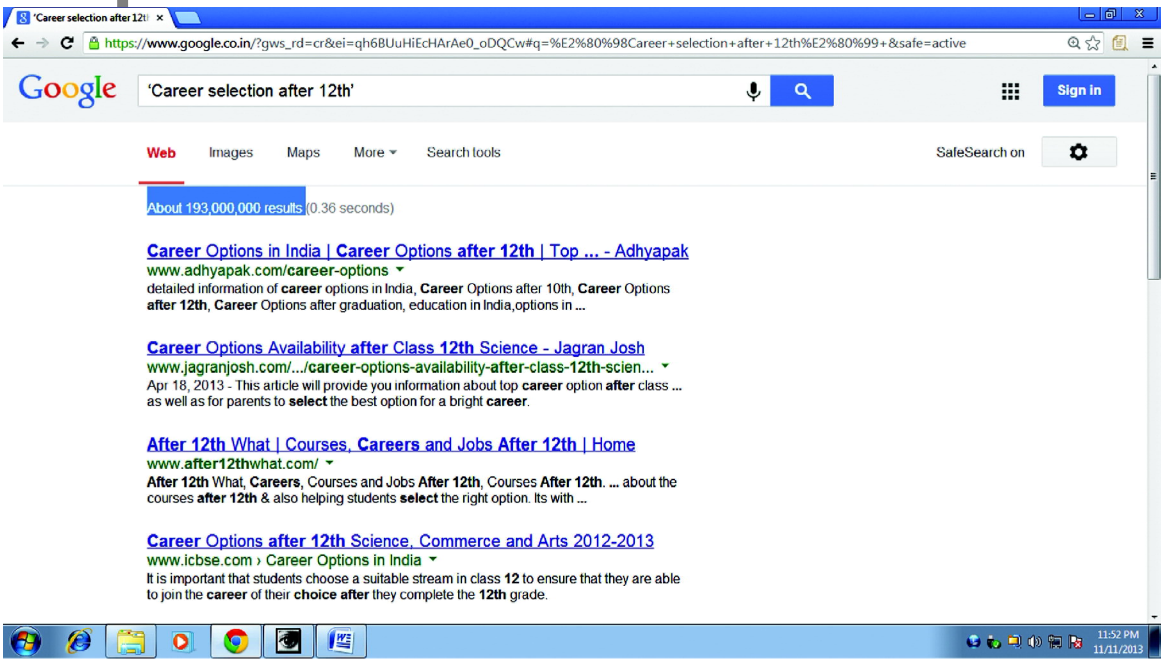

Fig. 18.4: Search Result of search 'Career selection after 12th' on Google

After analysing the results of these two searches, you can understand that even if the concepts are same, a change in keywords yields different search results. Hence, the advanced search techniques are required to be used to get precise search results.

18.4.2 Advanced Search Techniques

Advanced search techniques are a searching mechanism, which uses different parameters for getting precise search results. In previous lesson, you have studied different operators and parameters used in designing a string to get precise results. Different search engines provide different set of parameters and operators to get relevant and precise results. It is recommended that a searcher should follow the guidelines provided by a particular search engine and accordingly design a query. Further, for reducing the number of references from the set of search results, add more parameters. For example, we selected the Google Advance at http://www.google.ca/advanced_search, for our search query 'Career selection after senior secondary'. The Google Advance provides parameters for limiting the search for getting more relevant results. The search conducted on the basis of these parameters showed 379, 000 references. The query has been shown in Fig. 18.5 and the result in Fig. 18.6.

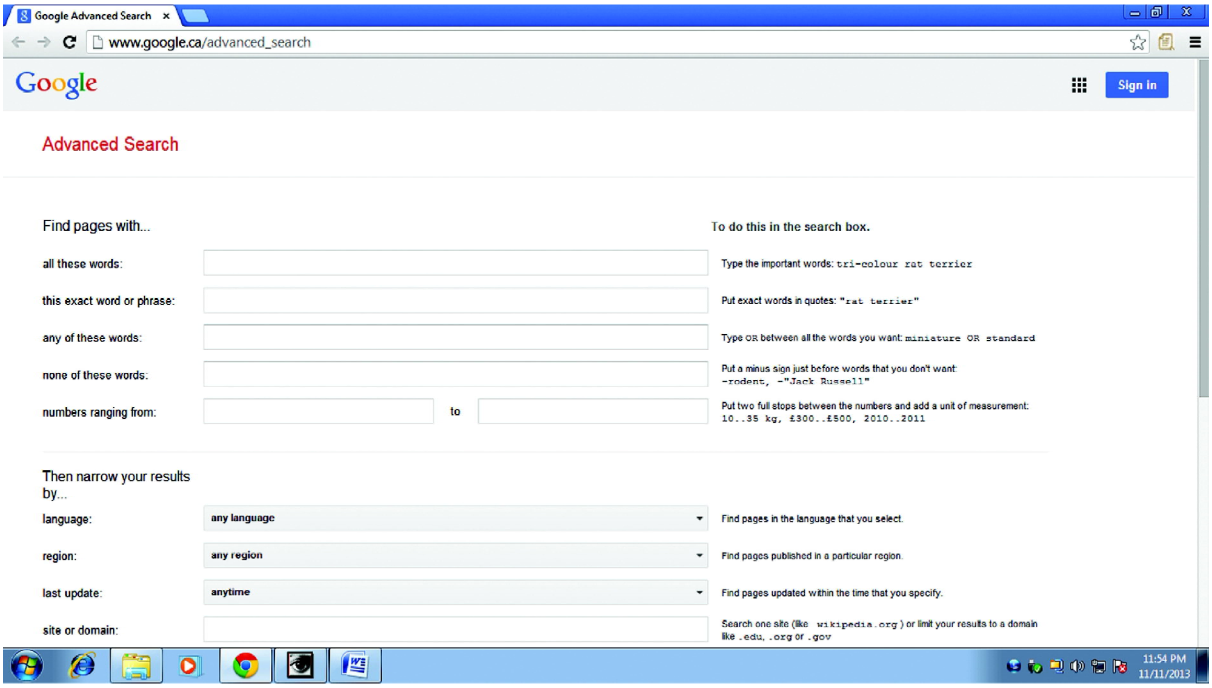

Fig. 18.5: Query 'Career selection after senior secondary'submitted to Google Scholar

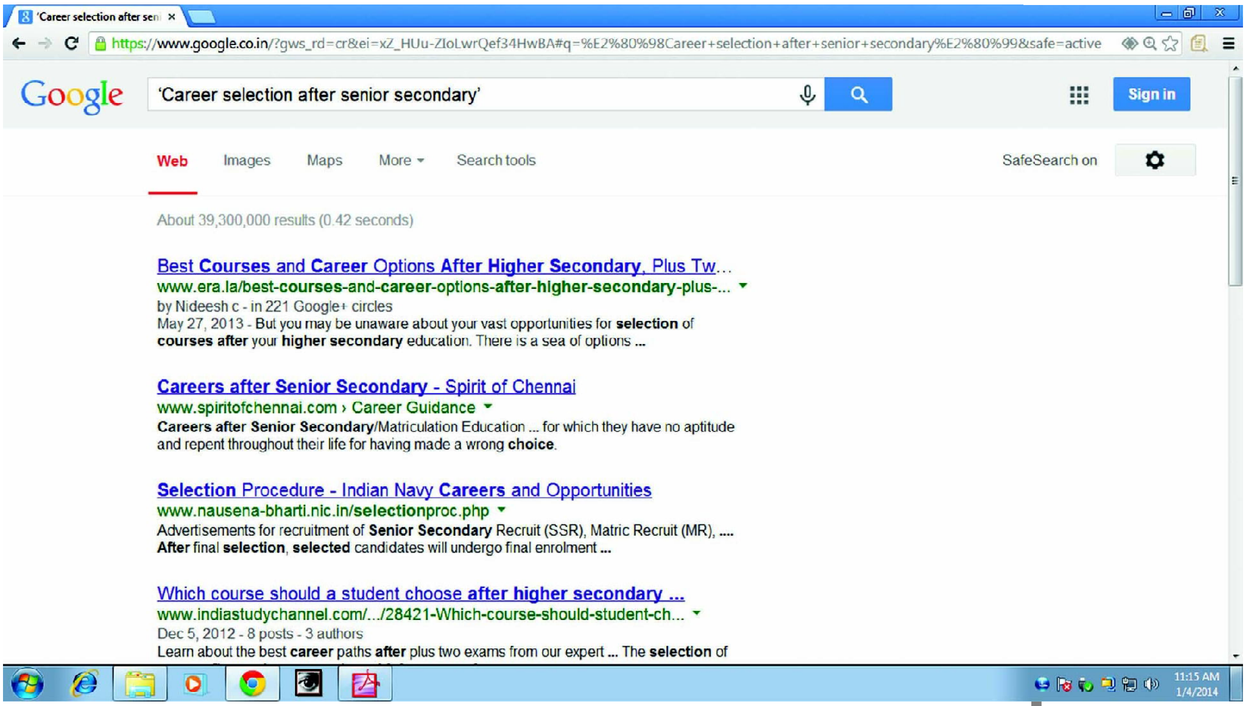

Fig. 18.6: Search result for query 'Career selection after senior secondary' by Google Scholar

Further, the same search was redesigned and more parameters were added. The input box containing keywords of string has been shown in Fig. 18.7.

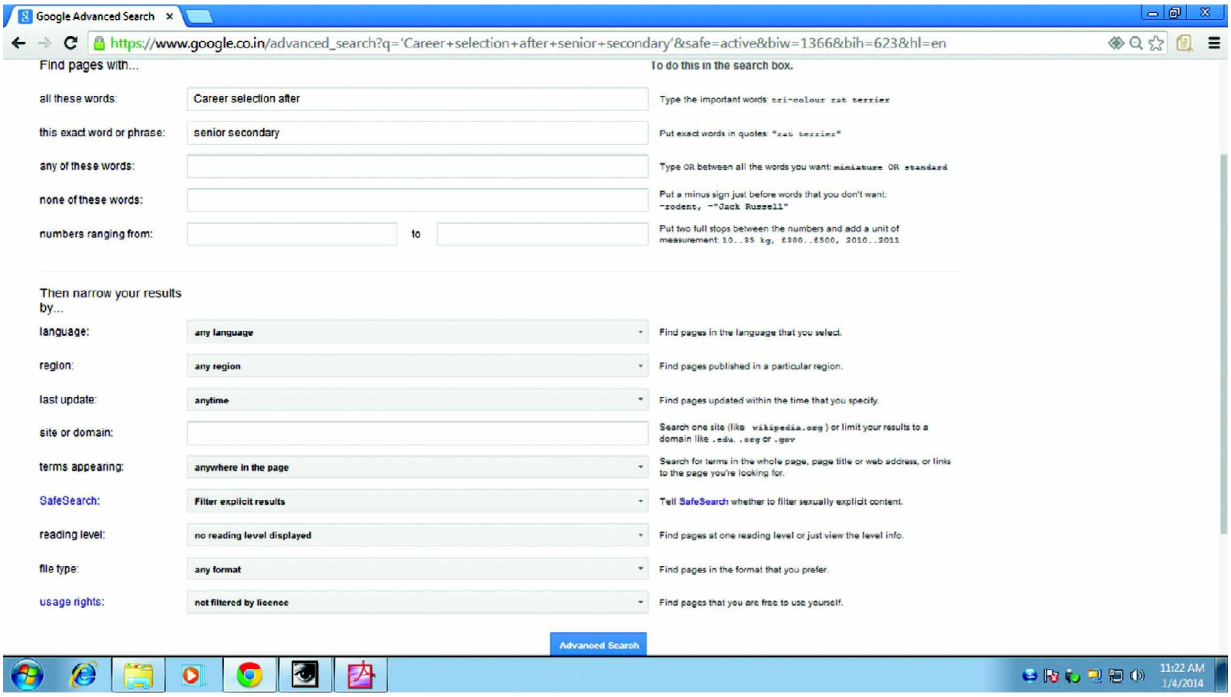

Fig. 18.7: Query 'Career selection after senior secondary' to Google Scholar using parameters

With these parameters, we got a list of 49,000 references. It clearly shows the impact of adding more parameters, provided by advance search engine.

INTEXT QUESTIONS 18.2

1. Define simple search technique.

2. Explain advanced search technique.

18.5 BOOLEAN LOGIC AND QUERY

Boolean Logic and its operators have already been discussed in previous lesson. Let us now design a few search strings and search these on internet to see the impact of the logic. The Google has given guidelines for using the Boolean Operators, "AND", "OR", "NOT"and other operators at http://support.google.com/websearch/bin/answer.py?hl=en&answer=136861. Before using Google, it is recommended to go through the guidelines to get better search results.

We designed the same search as ‘Career selection after’ and ‘Senior secondary’ OR ‘12th’ with the language parameter ‘English’ and region ‘India’. We got a list of only four references. The result is shown in Fig. 18.8.

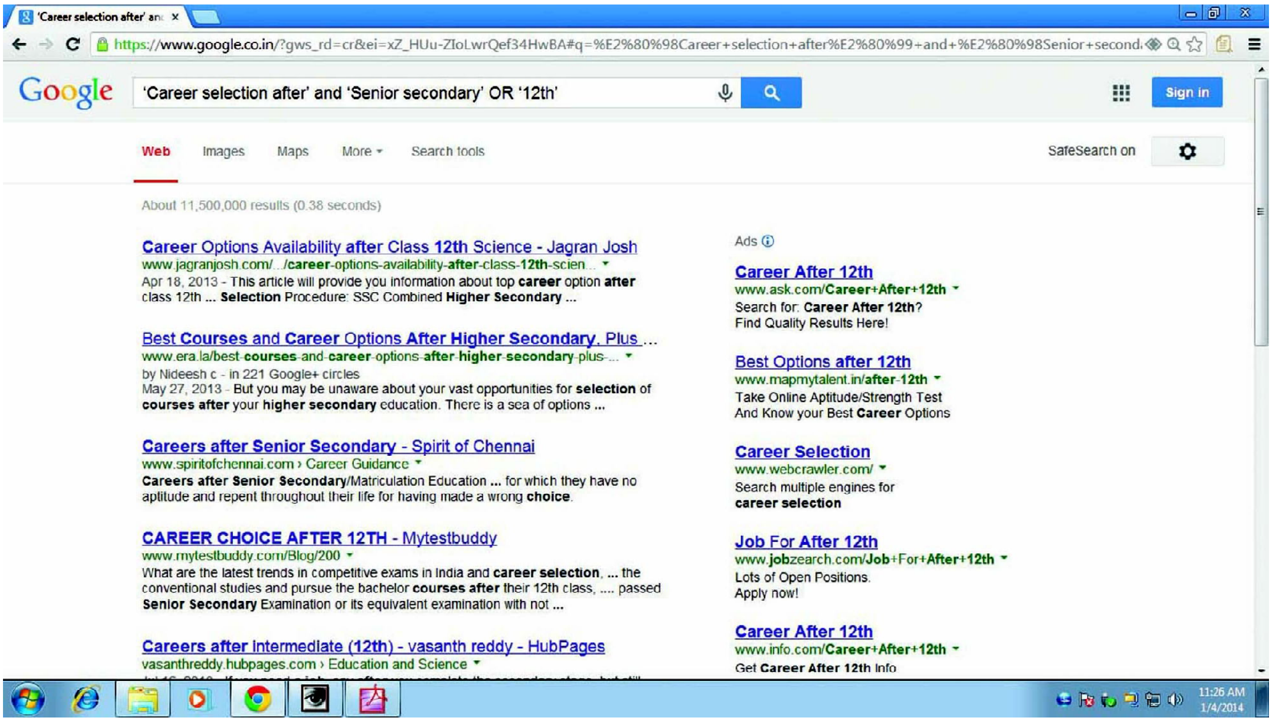

Fig. 18.8: Search result of query ‘Career selection after’ and ‘Senior secondary’ OR ‘12th’ with the language parameter ‘English’ and region ‘India’

INTEXT QUESTIONS 18.3

1. What is the purpose of “AND” in Boolean Logic?
2. Identify the purpose of “OR” in Boolean Logic.
3. Elaborate the purpose of “NOT” in Boolean Logic.

18.6 SEARCH ENGINES ON INTERNET

Hundreds of search engines are available on internet. There are a number of websites which provide studies and analyses about the search engines, those are active on internet. For further information, you can visit http://www.thesearchenginelist.com/. As it is not feasible to list all the search engines and their features here, a list of selected search engines with their brief introduction and categories is given below.

Search Engine	Description
Google	**Google**: The world's most popular search engine.
bing	**Bing** Search: Microsoft's entry into the burgeoning search engine market. Better late than never.
YAHOO!	**Yahoo!** Search: The 2nd largest search engine on the web (as defined by a September 2007 Nielsen Netratings report).
LexisNexis	**LexisNexis**: LexisNexis claims to be the "world's largest collection of public records, unpublished opinions, forms, legal, news, and business information". Searchable archive of newspapers, public records & more.
dieselpoint	**Dieselpoint**: Search & Navigation. Dieselpoint provides advanced full-text search with data navigation capability. It gives users highly relevant results not possible with either traditional search engines or SQL databases.
ORACLE SECURE ENTERPRISE SEARCH 10g	**Oracle Secure Enterprise Search 10g**: a standalone product from Oracle, enables a secure, high quality, easy-to-use search across all enterprise information assets.
SAP	**SAP** NetWeaver Search and Classification (TREX): finds information in both structured and unstructured data. TREX provides SAP applications with services for searching and classifying large collections of documents.
SAIC TeraText	**TeraText Suite:** Most data resides in semi-structured, primarily textual documents, not in structured, organizational repositories. Teratext is designed for text-rich data repositories.

Vivisimo Clustering Engine: developed by scientists based upon a mathematical algorithm and deep linguistic knowledge to find relationships between search terms and bring them to light. (Web search:Clusty)

Guruji.com: India - an Indian Internet search engine that is focused on providing better search results to Indian consumers, by leveraging proprietary algorithms and data in the Indian context.

Rediff: India - India's leading internet portal for news, mail, messenger, entertainment, business, mobile, ecommerce, shopping, auctions, search, sports and more.

Naukri.com (India): An India-focused job search engine.

WebMD: A source for health information, a symptom checklist, pharmacy information, and a place to store personal medical information. As the leading US Health portal, it scores over 40 million hits per month.

YouTube: Owned by Google, the web's largest media site. This search will search through the videos of YouTube only.

FindSounds: Search engine to find any kind of sound file: WAV, MP3, AIFF, AU - search by sample rate and quality... a great place to find those sound effects.

Ask Jeeves was designed to allow users to get answers to questions posed in everyday, natural language. Ask.com was the first such commercial question-answering search engine for the Web.

INTEXT QUESTIONS 18.4

1. What are the features of WebMD?
2. Explain the search engine Ask Jeeves.
3. Write down the features of Dieselpoint.

18.7 SEARCH ENGINES AND CATEGORIES OF RESOURCES

The search engines on internet have categorized the information sources on the basis of types or format. For example, the Google categorises the information sources as maps, image, news, scholar, scholarly papers, and many more. The details of the categories are available at http://www.google.co.in/intl/en/about/products/. The Yahoo has categorised information in web, video, news and local categories.

Searching information on web under these categories has become effective using category specific search. A search was conducted using this feature of the Google search engines, to find the effectiveness of the engine in search output. The query was 'NIOS, NOIDA, India'. The results are shown below:

(a) Under Map category, we got location of the NIOS, NOIDA, Uttar Pradesh, India.

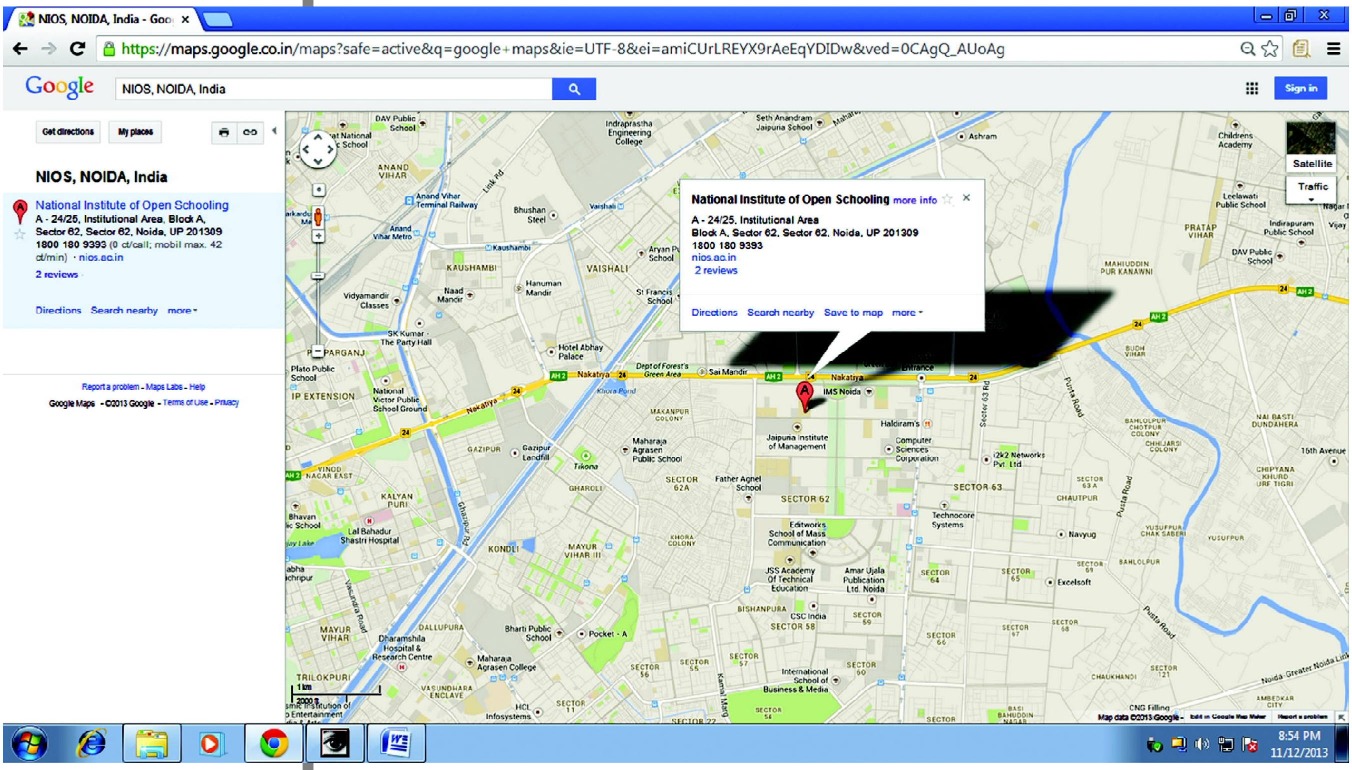

Fig. 18.9: Google's search output of 'NIOS, NOIDA, India' in map category

(b) Under image category, we got the search output of the sources which have images of the NIOS.

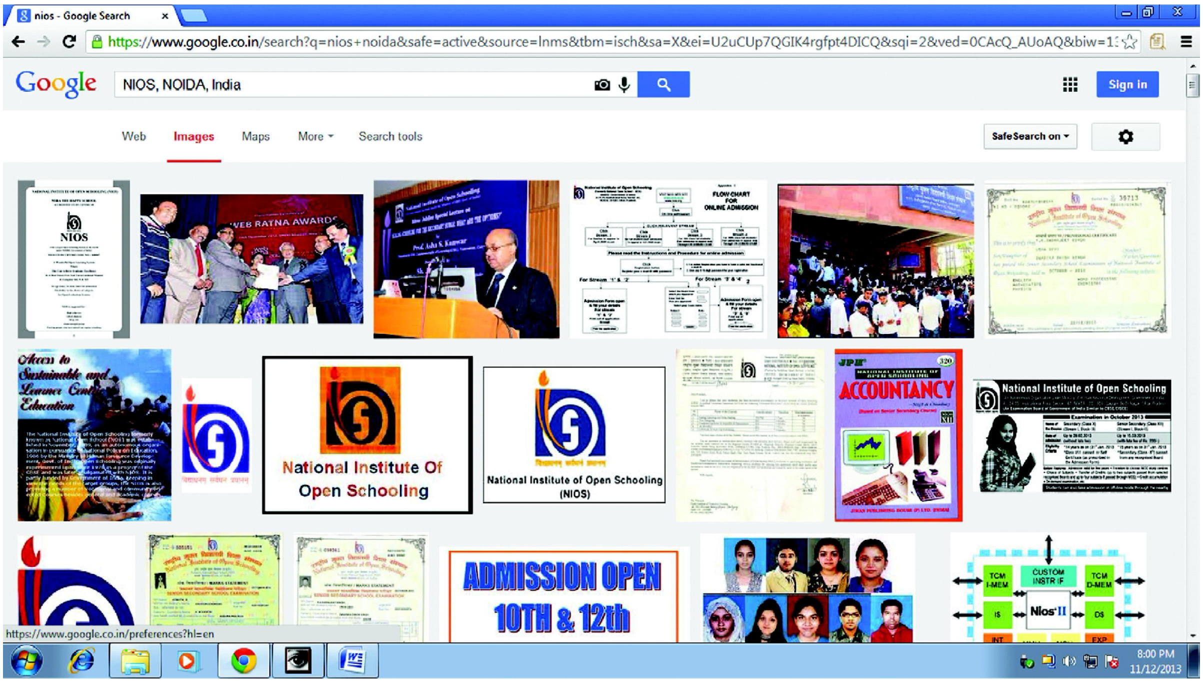

Fig. 18.10: Google's search output of 'NIOS, NOIDA, India'in image category

(c) Under scholar category, there were 34 hits 'NIOS, NOIDA, India'. After evaluating the articles, it was found that the articles contained this string in their text.

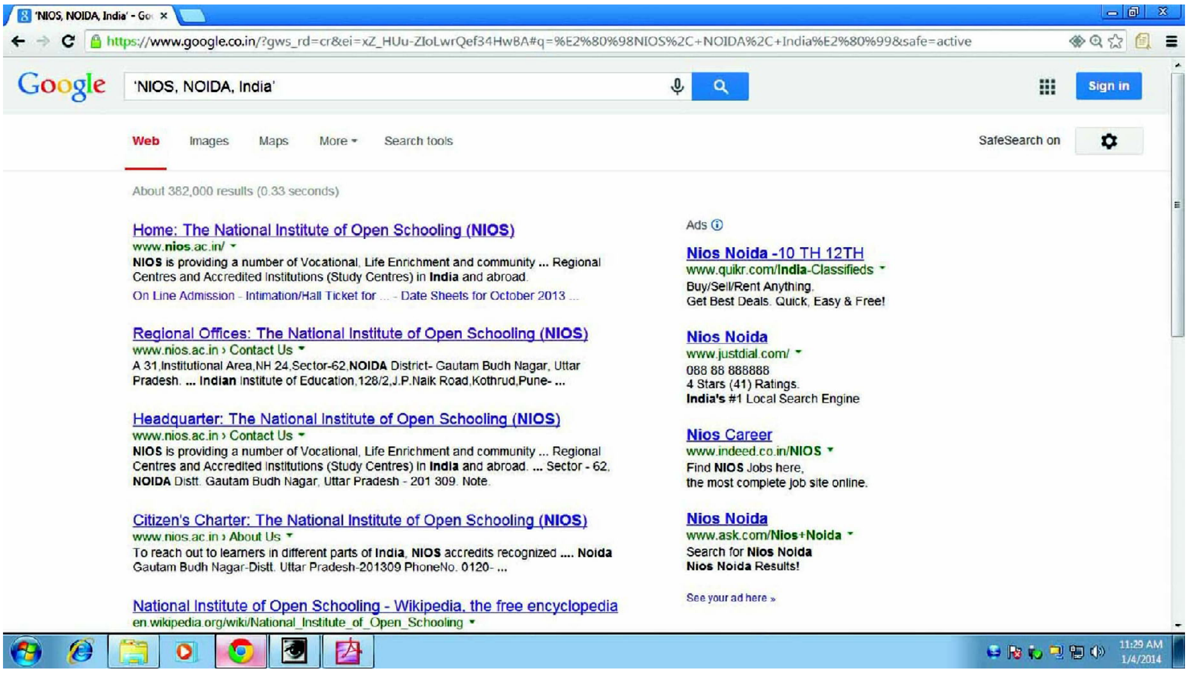

Fig. 18.11: Google's search output of 'NIOS, NOIDA, India' in scholar category

(d) Under web category, there were 293,000 hits for 'NIOS, NOIDA, India'. After evaluating a few of these references, we found that all the terms of the string appeared in the text of the web pages.

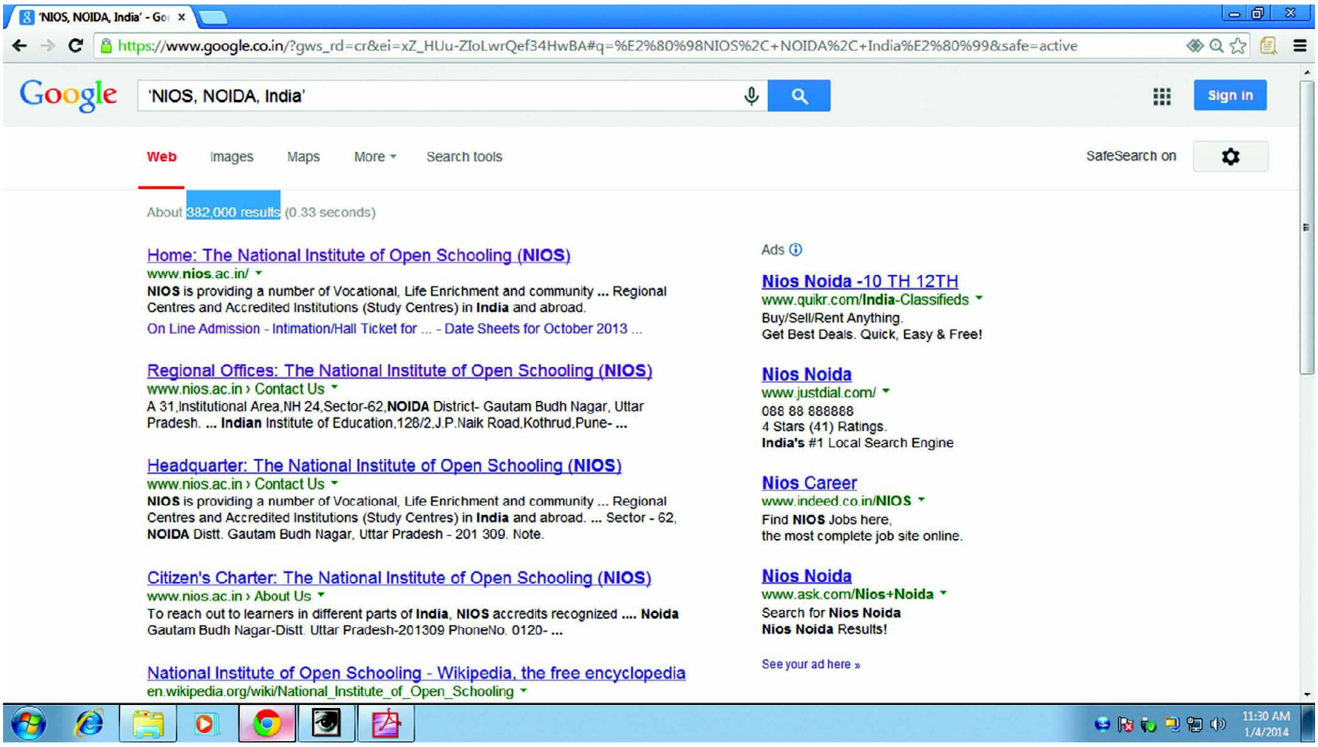

Fig. 18.12: Google's search output of 'NIOS, NOIDA, India' in web category

The analysis of these results shows that as per the need of the search, we should conduct category based search to get effective results. The category could be decided on the basis of the need of the search.

18.8 SEARCH ENGINES IN VERNACULAR LANGUAGES

Internet is the largest library in the world, if seen from the point of view of a library. There are hundreds and thousands of information sources available on internet in languages other than English. With the invention of the UNICODE, the web compatible documents are created in different languages and put on web. Therefore, now the search engines are providing facility to search information using vernacular languages. For example, the 'Google.co.in' which is the default page in India, provides search facilities in Hindi, Bengali, Telugu, Marathi, Tamil, Gujarati, Kannada, Malayalam and Punjabi other than English language. The effectiveness of the search engines can be evaluated by the people of concerned language. The official blog of Google says that, it provides search facility in forty languages. Hence, people of different languages can use the search engine for finding information on internet in their own language.

INTEXT QUESTIONS 18.5

1. What kind of information is covered by Google Scholar?
2. Name a few Indian languages in which Google can Search?

18.9 EFFECTIVE SEARCHING ON INTERNET

For getting effective results from the search engines, a searcher should have knowledge of behaviour and the features of the search engines. Almost all the search engines on internet use operators in one or another form. The operators, truncation signs and symbols or any others tools used by the search engines, should be first understood by the searcher before designing the search query and searching information. For this purpose, it is suggested that searchers should read the guidelines provided by the search engines on their websites. For example, the Google provides a dedicated website where, the guidelines for searchers have been given(http://support.google.com/websearch/?hl=en). 'Tips for search' and 'Explore Google search' are two important sections that help searchers to search information on internet effectively. Other search engines, like Yahoo, Ask, Bing, etc. also provide help to the searchers for effective search. The search process on internet can best be described with the help of a diagram.

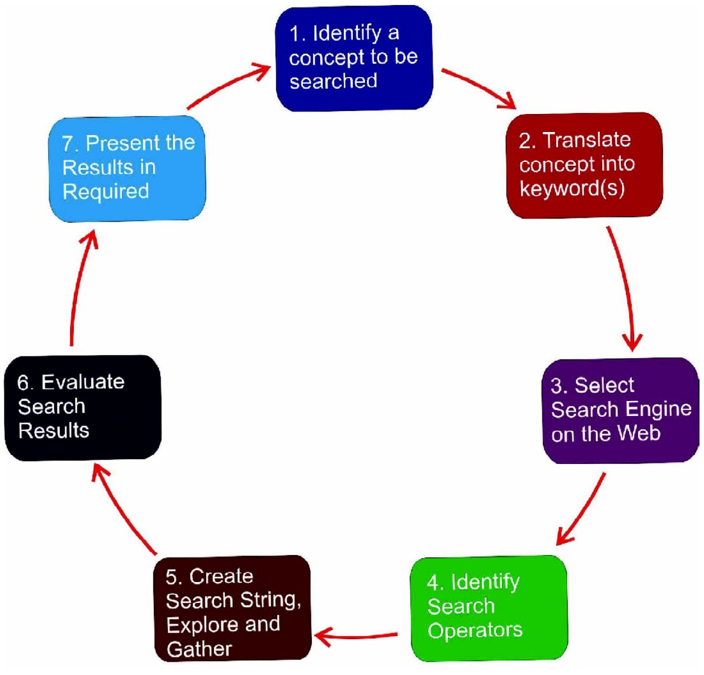

Figure 18.13: Diagram of search process on Internet

The Fig. 18.13 shows the process of searching information on internet in seven steps. The steps can be described as:

Step –1: Identify whole concept on which you want to conduct a search. Choose some keywords, subject descriptors, and/or sentences, and the types of information sources you are looking for.

Step –2: Translate the concept,terms, phrases, their alternatives and associated terms or subjects, etc. into keywords.

Step-3: Select information domain to be searched, like your library, OCLC, LISA, PubMed, etc., or suitable search engine on internet.

Step-4: Identify operators and symbols used by the search engine of the information domain.

Step-5: Create a search string using operators and/or connectors and conduct the search.

Step-6: Evaluate the result and if needed, modify the search by choosing alternate terms. Expand the scope of the subject or topics and put more parameters like date of publication, language, form, source, etc. provided in the search engines.

Step-7: Present the search results in a user friendly format.

These seven steps can make a searcher expert in finding information from Internet. The experiments with search query, permutation combination of the terms in the query, using set of symbols and analysis of the results for each and every query, as well as the impact of the change in the string, can make a searcher expert in searching the information on Internet. It is always recommended that, the searcher should use at least two search engines to get effective and relevant results.

WHAT YOU HAVE LEARNT

- Internet has become the largest repository of information in the world. It stores all kinds of information in digital form.
- There are three main purposes of searching information on internet, namely (a) Navigational Search, (b) Informational Search, and (c) Transactional Search.
- Searching information on internet is both an art and a science.
- Simple search technique is a mechanism of finding information on internet

for beginners in which one selects a search engine and enters a simple query and searches the information.

- Advanced search technique is a mechanism where one can use operators and other parameters provided by the search engines to get precise results.
- Boolean Logic uses 'AND', 'OR', 'NOT' as operators to express the concepts to be searched in terms of string to be understood by the search engines.
- There are a number of search engines on internet. One can select the search engine as per the requirements of the search.
- For getting better results, search engines have categorized information resources in different categories as Map, Images, Books, Articles, etc.
- Information resources are available on internet in languages other than the English language also. Therefore, the search engines are available in Indian languages also like Tamil, Malayalam, Bengali, etc.

TERMINAL QUESTIONS

1. Why a search engine is needed on internet?
2. Discuss the purposes of search on Internet.
3. Discuss features of advanced search techniques.
4. How do the Boolean operators work?
5. What do you understand by search engines in vernacular language?
6. Discuss various steps of effective search on internet.

ANSWERS TO INTEXT QUESTIONS

18.1

1. A search engine is a software program that searches for sites based on the words that we refer to as search terms. Internet search engines are thus special sites on the Web that are designed to help people find information stored on other sites. There are differences in the ways various search engines work.
2. With an ad hoc search, the searcher's goal is to find as many relevant documents as possible about a topic. An ad hoc search is informational in

nature, as searcher is looking for information about a subject from vast resources. The searcher may or may not have previous knowledge about the topic but, wants to read or learn more about it.The intent of the informational search is to acquire some information, assuming it is available on the internet.

18.2

1. Simple search technique is a mechanism for finding information on internet on the basis of a query submitted to search engine in term of simple keywords.
2. Advance search technique is a searching mechanism where different parameters are used for getting precise search results.

18.3

1. The purpose of the 'AND' operator is to find the information source where both the terms connected by this operator exist.
2. The purpose of the 'OR' operator is to find the information source where either of the two terms connected by this operator exist.
3. The purpose of the 'NOT' operator is to find the information source where first term exists but not the second term.

18.4

1. WebMD is a source for health information, a symptom checklist, pharmacy information, and a place to store personal medical information. As the leading US Health portal, it scores over 40 million hits per month.
2. Ask Jeeves is designed to allow users to get answers to questions posed in everyday natural language. Ask.com was the first such commercial question-answering search engine for the Web.
3. Dieselpoint provides advanced full-text search with data navigation capability. It gives users highly relevant results not possible with either traditional search engines or SQL databases.

18.5

1. The Google Scholar covers the full text of scholarly literature.
2. Indian languages in which Google can search are Hindi, Bengali, Gujarati, Marathi, Kannada, Punjabi, etc.

GLOSSARY

Browse: To browse through a web page is exploring what's there and seeing where the links take you. When you browse, you have to guess which words and links on the page pertain to your interests.

Browsers: Software programs that enable you to view web pages and other documents on the Internet. They "translate" HTML-encoded files into the text, images, sounds, and other features you see. The most commonly used browsers are Microsoft Internet Explorer, Firefox, Mozilla, Safari, Opera, and Chrome.

HTML: Hypertext Markup Language.

ISP: Internet Service Provider - a company that sells direct access to the Internet.

LCOC: Library of Congress Online Catalog

Meta-Search Engine: Search engines that automatically submit your keyword search to several other search tools, and retrieve results from all their databases.

OPAC: Online Public Access Catalogue

PubMed: It is a free database accessing primarily the MEDLINE database of references and abstracts on life sciences and biomedical topics.

Server/Web Server: A computer running that software, assigned an IP address, and connected to the Internet so that it can provide documents via the World Wide Web.

Site/Web-Site: This term is often used to mean "web page," but there is a difference. A web page is a single entity, one URL, one file that you might find on the Web. A "site," properly speaking, is a location or gathering or centre for a bunch of related pages linked to form that site.

UNICODE:A set of standard coding schemes intended to replace the multiple coding schemes currently used worldwide. The Unicode Consortium developed the original standard, Unicode Transformation Format-16 (UTF-16), in 1991 as a standard coding scheme to support multiple complex alphabets such as Devanagri (Hindi), Bengali, Chinese, Japanese, Korean, etc.

URL: Uniform Resource Locator. It is the unique address of any Web document.

Vernacular Language: A vernacular language is the native language or native dialect of a specific population, community or region.

WWW: The World Wide Web

WEBSITES

http://www.thesearchenginelist.com/

http://www.ncbi.nlm.nih.gov

www.swse.org

http://www.w3.org/standards/semanticweb/

http://www.google.com

http://www.yahoo.com